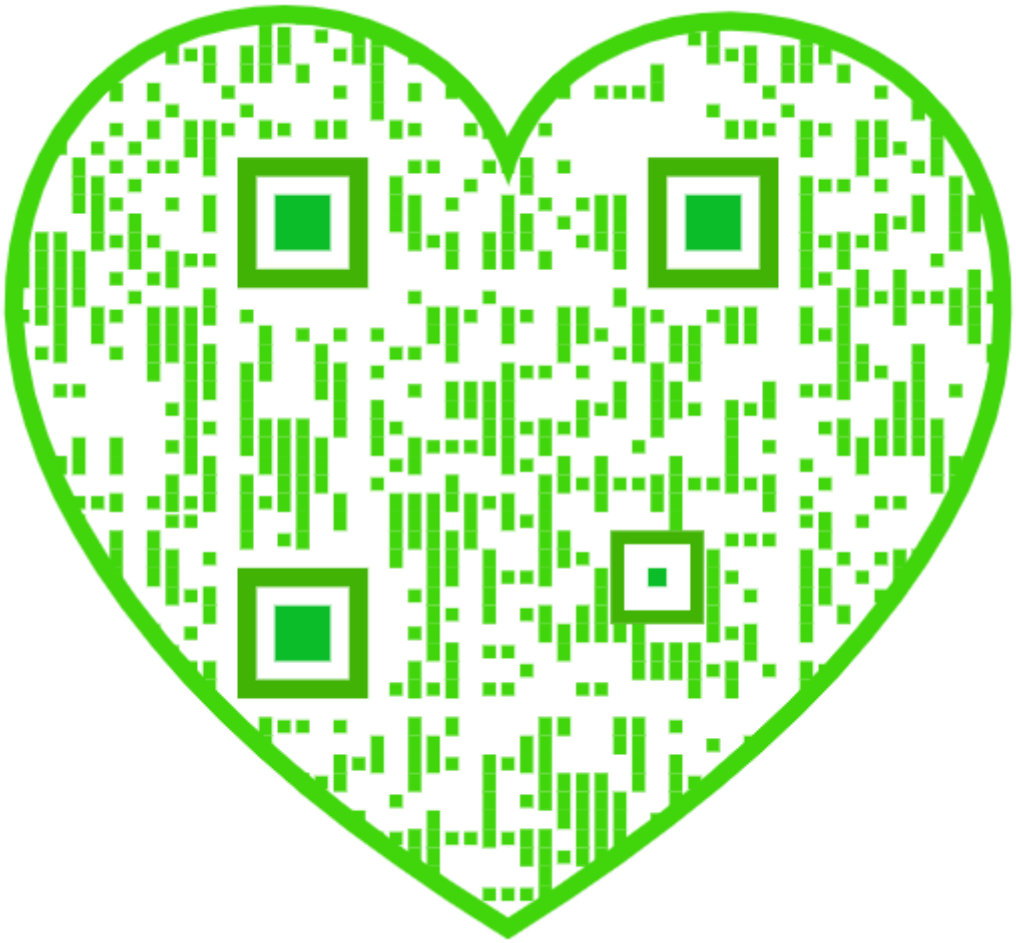

MATHEMATICS FOR COMMON SCHOOLS

PART I

AN

ELEMENTARY ARITHMETIC

BY

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ELEMENTARY ARITHMETIC.

CHAPTER I.

ADDITION AND SUBTRACTION.

ADDITION.

1. Oral Problems.

1. A girl pays four cents for a slate and one cent for a pencil. How much do both cost?

2. There are three pears on one plate and two on another. How many are there on both plates?

3. John had two marbles. How many had he after buying four more?

4. Mary is four years old, and Harry is two years older. How old is Harry?

5. A boy lost three tops and had three tops left. How many had he at first?

6. How many cents will it take to buy a five-cent ball and a two-cent kite?

7. Ned has four large fire-crackers and four small ones. How many fire-crackers has he?

8. How many wheels has a bicycle? How many has a tricycle? How many have both together?

9. I paid six cents for Roman candles and three cents for torpedoes. How many cents did I spend?

10. William rode four miles to his uncle's and four miles home again. How many miles did he ride?

NOTATION AND NUMERATION.

2. The first nine numbers are written as follows:

One.	Two.	Three.	Four.	Five.	Six.	Seven.	Eight.	Nine.
1	2	3	4	5	6	7	8	9

Zero, or nothing, is written 0.

3. Sight Exercises.

Add:

2	3	5	4	3	4	2	3	2	1	0
4	2	1	5	3	2	5	6	3	3	9
5	7	1	0	6	4	0	2	3	4	6
0	2	5	4	3	4	7	6	5	0	2
0	8	4	9	1	7	2	3	8	1	4
0	1	3	0	6	1	0	4	0	1	1
3	7	6	0	5	3	2	0	6	5	0
1	0	1	6	2	0	1	8	0	3	1
5	1	0	1	2	1	0	1	2	1	0
4	2	5	8	2	7	3	0	7	4	2

NOTE. Brief drills should be given *regularly*, upon the preceding combinations, as well as upon those that follow. It is important, however, not to waste time by prolonging them too much.

NOTATION AND NUMERATION.

4. Ten is written 10.

Ten and one are eleven, written 11. Ten and two are twelve, written 12. Thirteen is written 13. Fourteen, 14. Fifteen, 15. Sixteen, 16. Seventeen, 17. Eighteen, 18. Nineteen, 19.

Twenty is written 20. Twenty-one, 21. Twenty-two, 22.

Thirty, 30. Forty, 40. Fifty, 50. Sixty, 60. Seventy, 70. Eighty, 80. Ninety, 90.

5. Write in figures:

Twenty-three. Thirty-one. Forty-two. Fifty-four. Sixty-five. Seventy-six. Eighty-seven. Ninety-eight.

Twenty-five. Thirty-six. Twenty-seven. Forty-eight. Twenty-nine. Fifty. Fifteen. Seventeen. Seventy. Ninety-nine. Eighty-four.

6. Read the following numbers:

11,	34,	45,	13,	10,	95,	16,	46,	19,
25,	94,	73,	90,	44,	60,	55,	21,	56,
83,	17,	54,	36,	50,	40,	33,	63,	72,
49,	74,	62,	47,	32,	71,	28,	52,	93,
75,	64,	48,	68,	18,	69,	12,	23,	57.

The right-hand figure is called the **units' figure.**

7. Slate Exercises.

If there are 12 boys in the first row and 11 boys in the second row, how many are there in both rows?

Write the numbers, placing the units' figure of the second under the units' figure of the first. Add the right-hand column, placing the total, 3, underneath. Then write the total of the other column. The answer is 23 boys. Use *b.* for boys.

12 *b.*
11 *b.*
23 *b.*

8. Add:

1. 22 30	**2.** 10 45	**3.** 31 14	**4.** 16 40	**5.** 25 2	**6.** 50 6
7. 13 42	**8.** 26 30	**9.** 15 41	**10.** 27 12	**11.** 48 51	**12.** 72 23
13. 29 40	**14.** 15 62	**15.** 63 15	**16.** 76 20	**17.** 27 71	**18.** 90 8
19. 63 30	**20.** 36 63	**21.** 20 75	**22.** 46 40	**23.** 57 31	**24.** 60 35
25. 71 26	**26.** 33 33	**27.** 44 44	**28.** 22 66	**29.** 96 2	**30.** 78 10
31. 35 50	**32.** 69 10	**33.** 28 71	**34.** 45 43	**35.** 74 15	**36.** 63 6
37. 35 54	**38.** 18 60	**39.** 43 25	**40.** 83 6	**41.** 25 50	**42.** 43 34
43. 26 71	**44.** 27 61	**45.** 39 60	**46.** 45 4	**47.** 63 6	**48.** 24 62

9. Slate Problems.

49. How many are 21 cows and 13 cows?

Write *c.* for cows.

50. 16 apples and 10 apples? 40 roses and 21 roses? 30 fire-crackers and 50 fire-crackers? 22 cents and 41 cents?

51. Mary paid 50 cents for a doll and 15 cents for a rubber ball. How much did both cost?

Write ¢ for cents.

52. There were 16 horses in the field. A man put in 3 more. How many horses were then in the field?

53. Jane is 10 years old; her mother is 20 years older. How old is her mother?

54. A farmer sold 40 eggs on Monday. On Tuesday he sold 24 eggs. How many did he sell on both days?

55. There are 32 pages in John's book. In William's book there are 14 pages more than there are in John's. How many pages are there in William's book?

56. How much would you pay for a quart of ice-cream at 40 cents and a quart of strawberries at 15 cents?

57. If there are 50 boys in one class and 40 boys in another class, how many are there in the two classes?

58. A girl has read 25 pages in a primer and 40 pages in a first reader. How many pages has she read in both books?

59. There are 14 houses on one side of a street and 13 on the other side. How many houses are there on both sides?

10. Oral Problems.

1. A wheel-barrow has 1 wheel, a cart has 2 wheels, and a wagon has 4 wheels. How many wheels are there on all three?

2. A boy has 5 cents in his bank, 3 cents in his desk, and 1 cent in his pocket. How much money has he?

3. How much would I have to pay for a 5-cent ball, a 2-cent top, and a 1-cent kite?

4. Frank gave 3 cherries to Mary, 3 to Fred, and had 3 for himself. How many had he at first?

5. There are 3 pictures on one wall, 2 on another, 1 on another, and 2 on another. How many pictures are there on the four walls?

6. A girl pays 4 cents for a slate, 3 cents for a blank book, and 2 cents for a lead pencil. How much does she pay for all of them?

7. There are 3 books on the first shelf, 3 on the second shelf, and 3 on the third shelf. How many are there on the three shelves?

8. A boy reads 2 pages on Monday, 2 on Tuesday, 2 on Wednesday, and 2 on Thursday. How many pages does he read in four days?

9. There are 3 birds on one branch, 2 on another, 1 on another, 2 on another. How many birds are on the four branches?

10. William is 5 years old, James is 2 years older than William, Sarah is 2 years older than James. How old is Sarah?

11. Sight Exercises.

In adding these and subsequent examples, the pupils should use as few words as possible. In the first example, six — eight is said; three — six, in the second; five — nine, in the third; etc.

Add:

2	3	4	5	2	4	0	1	4	1
4	2	2	1	2	0	1	2	5	2
2	1	3	2	2	4	3	3	0	4
1	8	9	2	1	3	4	7	6	
7	0	0	3	5	3	1	1	2	
1	1	0	2	2	3	1	0	1	
1	2	3	1	0	3	5	3	0	
3	3	4	5	4	6	2	4	0	
2	4	0	2	4	0	2	0	0	

2	1	4	2	4	5	4	3	2
2	2	0	0	2	1	0	1	0
2	3	3	4	0	2	4	1	6
2	2	1	2	3	1	0	3	1
1	8	0	2	1	3	4	2	1
7	0	9	3	5	3	1	2	1
1	0	0	2	2	3	1	2	1
0	1	0	1	0	0	3	3	5

12. Slate Exercises.

Add:

1. 22	**2.** 43	**3.** 17	**4.** 6	**5.** 35	**6.** 11
12	5	20	21	21	55
5	20	41	30	12	22
7. 10	**8.** 35	**9.** 1	**10.** 95	**11.** 64	**12.** 27
14	4	3	2	5	10
15	50	34	1	30	61
13. 35	**14.** 33	**15.** 1	**16.** 13	**17.** 52	**18.** 17
13	33	16	42	4	60
41	33	50	34	12	1
19. 15	**20.** 47	**21.** 22	**22.** 13	**23.** 15	**24.** 43
4	20	22	23	3	32
20	10	22	33	60	11
25. 50	**26.** 4	**27.** 41	**28.** 53	**29.** 25	**30.** 65
31	60	42	2	10	31
7	5	3	4	3	2
31. 12	**32.** 23	**33.** 16	**34.** 32	**35.** 4	**36.** 12
12	23	3	32	12	3
12	23	20	32	60	62
12	30	40	2	1	2

37.	38.	39.	40.	41.	42.
40	64	25	50	50	72
4	2	10	25	30	4
5	3	2	10	5	2
20	10	1	2	3	1
43.	44.	45.	46.	47.	48.
21	30	35	1	13	47
21	30	13	16	40	20
21	30	41	50	34	10
21	5	10	2	1	2
49.	50.	51.	52.	53.	54.
20	22	13	41	14	21
20	22	4	12	2	32
20	22	20	13	60	43
20	22	2	20	12	2
55.	56.	57.	58.	59.	60.
14	17	44	30	1	27
3	20	11	3	3	30
1	1	22	6	14	11
81	50	1	40	61	1

13. Original Problems.

Make problems containing the following numbers:

2	3	4	5	2
4	2	2	1	2
2	1	3	2	2

Thus: a duck has 2 feet, a cat has 4 feet, a hen has 2 feet. How many feet have they?

My father gave me 2 cents, my mother gave me 4 cents, uncle John gave me 2 cents. How many cents had I then?

14. Slate Problems.

1. How much will I have to pay for a pound of 50-cent tea, a pound of 25-cent coffee, a pound of raisins at 10 cents, and a 3-cent orange?

2. There are 30 boys in the first class, 42 in the second class, and 24 in the third class. How many are there in the three classes?

3. 22 girls had the right answer, and 17 had wrong ones. How many girls were in the class?

4. Martha has a 25-cent piece, a 10-cent piece, and a 2-cent piece. How much money has she?

5. I bought a piece of muslin for 24 cents, some ribbon for 20 cents, and a spool of thread for 5 cents. How much did I pay?

6. There are 24 cherries on one branch, 20 on another, and 40 on another. How many are there on the three branches?

7. A hunter shot at a flock of blackbirds. He killed 16, and 10 flew away. How many were there in the flock?

8. There are 25 ducks in one pond, and 24 in another pond. How many are there in both?

9. Mrs. Jones bought a doll for Mary for 40 cents, and one for Sarah for 40 cents. How much did she pay for the dolls?

10. A boy paid 20 cents for fire-crackers, 10 cents for torpedoes, 5 cents for pin-wheels, 4 cents for sky-rockets. How much money did he spend?

SUBTRACTION.

15. Oral Problems.

1. A boy spent 9 cents for a blank book and a slate. The blank book cost 5 cents. How much did he pay for the slate?

2. Mary wishes to buy a 5-cent doll. She has 3 cents already. How many more cents does she need?

3. Sarah is 6 years old. In how many years will she be 8?

4. Thomas took out 6 marbles. He brought back 8. How many did he buy?

5. What number must we add to 4 to make 7?

16. Oral Exercises.

8 and what are 9?	3 and what are 5?
6 and what are 8?	7 and what are 7?
7 and what are 9?	2 and what are 4?
5 and what are 6?	1 and what are 4?
9 and what are 9?	7 and what are 8?
5 and what are 7?	3 and what are 3?
2 and what are 5?	3 and what are 6?
6 and what are 9?	8 and what are 8?
0 and what are 2?	4 and what are 7?
1 and what are 9?	0 and what are 8?
5 and what are 5?	4 and what are 6?
4 and what are 4?	2 and what are 6?
5 and what are 9?	4 and what are 8?
1 and what are 6?	0 and what are 9?
1 and what are 8?	3 and what are 7?
0 and what are 6?	4 and what are 5?
5 and what are 5?	2 and what are 7?
3 and what are 4?	2 and what are 9?
3 and what are 3?	1 and what are 5?
4 and what are 9?	4 and what are 4?

17. Give the missing numbers:

2	6	0	1	0	5	1	2
?	?	?	?	?	?	?	?
8	6	7	7	2	8	1	3
?	?	?	?	?	?	?	?
3	6	1	6	1	2	0	0
8	7	2	9	3	2	1	0

18. Oral Problems.

1. A girl has 6 cents. She spends 2 cents. How many cents has she left?

2. There were 5 pears on a plate. Some children ate 3. How many were on the plate then?

3. John had 8 marbles. How many had he after losing 4 marbles?

4. Harry is 6 years old. Mary is 2 years younger. How old is Mary?

5. A boy had 6 tops. He has 3 now. How many did he lose?

19. Sight Exercises.

Subtract:

$\begin{array}{r} 9 \\ 8 \\ \hline 1 \end{array}$ We see that 8 and 1 are 9. The answer is 1.

$\begin{array}{r} 5 \\ 3 \\ \hline 2 \end{array}$ 3 and 2 are 5. The answer is 2.

8	7	9	4	6	4	9	8	7	3
6	7	7	2	5	1	9	7	5	0
5	6	9	8	1	7	9	8	5	6
2	3	6	8	0	4	1	0	5	4
4	6	9	8	0	6	9	8	7	6
4	2	5	4	0	1	0	1	3	0
5	5	7	4	9	3	5	9	4	8
4	0	2	3	2	3	1	4	0	2
6	7	7	8	1	2	3	8	7	9
6	0	1	5	1	0	2	3	6	3

20. Original Problems.

Make problems in subtraction containing the following numbers:

Thus: there were 9 birds on a tree. 3 flew away. How many were left? A boy had 7 cents. He spent 4. How many cents had he then?

9	7	8	6	4
3	4	5	2	1

21. Slate Exercises.

A boy has 25 cents. He pays 15 cents for a ball. How much will he have then?

25¢
15¢
10¢

Write the larger number above the smaller, the units' figures in a line. Begin at the units' column, and find the number which must be added to 5 to make 5. Say 5 and 0 (writing the 0) are 5. 1 and 1 (writing 1) are 2. The answer is 10 cents.

In adding aloud, the word *and* should not be used. In subtracting, it indicates that the number said after *and* is to be written.

22. Subtract:

1. 64 − 52	**2.** 87 − 76	**3.** 55 − 15	**4.** 28 − 6	**5.** 57 − 16	**6.** 46 − 5
7. 79 − 18	**8.** 19 − 11	**9.** 35 − 24	**10.** 36 − 22	**11.** 94 − 24	**12.** 62 − 10
13. 70 − 30	**14.** 29 − 18	**15.** 18 − 5	**16.** 59 − 36	**17.** 66 − 33	**18.** 16 − 6
19. 88 − 44	**20.** 75 − 32	**21.** 69 − 16	**22.** 87 − 27	**23.** 99 − 98	**24.** 54 − 10
25. 35 − 4	**26.** 63 − 0	**27.** 59 − 34	**28.** 38 − 15	**29.** 96 − 22	**30.** 81 − 30
31. 17 − 2	**32.** 93 − 1	**33.** 85 − 41	**34.** 62 − 31	**35.** 38 − 3	**36.** 69 − 23
37. 88 − 43	**38.** 48 − 24	**39.** 75 − 50	**40.** 37 − 3	**41.** 29 − 5	**42.** 25 − 10
43. 64 − 32	**44.** 87 − 46	**45.** 28 − 5	**46.** 67 − 36	**47.** 55 − 25	**48.** 46 − 15
49. 79 − 27	**50.** 98 − 14	**51.** 49 − 11	**52.** 66 − 22	**53.** 98 − 24	**54.** 45 − 11

55.	56.	57.	58.	59.	60.
62	76	29	18	59	88
40	30	28	15	34	40

61. From 38 cows take 12 cows.

62. From 84 apples take 40 apples.

63. From 76 roses take 31 roses.

64. From 62 cents take 10 cents.

65. From 93 horses take 23 horses.

ADDITION AND SUBTRACTION.

23. Slate Problems.

66. A boy has 55 cents in his bank; his uncle gives him 10 cents more. How much money has he then?

67. James goes to the store with 75 cents; he buys 60 cents' worth of groceries. How much change does he bring home?

68. There are 32 boys in a class and 20 girls. How many more boys than girls are in the class?

69. There are 32 boys in a class and 20 girls. How many pupils are there in the class?

70. I did 60 problems last week; 40 were right. How many were wrong?

71. Sarah had 26 cherries; she ate 6. How many had she left?

72. There are 40 apples on one tree and 20 on another. How many apples are there on both trees?

73. Thomas wishes to buy a ball for 50 cents; he has saved 30 cents already. How many more cents does he need?

74. How much would a boy have to pay for a 25-cent ball and a 10-cent bat?

75. Ann buys a pound of 40-cent tea for her mother, and gets 10 cents change. How much money did she give the grocer?

24. Sight Exercises.

Add:

9	8	2	7	5	3	8	7	9
1	2	9	3	5	9	3	5	2
4	1	4	3	9	5	4	9	6
8	9	7	8	3	6	9	4	6
6	3	2	5	5	8	6	8	9
4	7	8	7	8	5	7	4	5

25. *The sign of addition is* +.

2 + 3 = 5 is read, 2 plus 3 equals 5; or, 2 and 3 are 5.

26. Give answers:

7 + 6	9 + 8	9 + 4	6 + 5
7 + 8	9 + 5	8 + 9	8 + 8
6 + 5	9 + 6	5 + 9	9 + 9
9 + 7	7 + 7	4 + 6	8 + 0
6 + 9	6 + 8	8 + 6	0 + 9
7 + 9	8 + 7	7 + 9	3 + 8

27. Oral Problems.

1. Susan has 9 splints in one hand and 3 in the other. How many splints has she in both hands?

2. A boy buys a ball for 10 cents, and a bat for 5 cents. How much does he give for both?

3. There are 7 girls sitting in the first row, and 6 girls in the second row. How many are there in the two rows?

4. Samuel has 8 cents. How much will he have if his aunt gives him 5 cents?

5. A man pays $10 for a coat, $3 for a vest, and $2 for a hat. How much does he pay for all of them?

ADDITION.

28. Add 28 and 7.—Write the numbers as before; add 7 and 8; the total is 15. Under the first column write the 5, carrying the 1 to the 2 in the second column, making the total 3. The answer is 35.

$$\begin{array}{r} 28 \\ +\ 7 \\ \hline 35 \end{array}$$

29. *The answer in addition is called the* **sum.**

30. Slate Exercises.

Find sums:

1. 16 4	**2.** 28 17	**3.** 39 46	**4.** 43 37	**5.** 65 29	**6.** 57 16
7. 78 15	**8.** 84 9	**9.** 23 68	**10.** 13 77	**11.** 23 57	**12.** 45 54
13. 36 25	**14.** 17 82	**15.** 58 15	**16.** 5 18	**17.** 23 35	**18.** 16 54
19. 27 72	**20.** 64 16	**21.** 14 28	**22.** 25 65	**23.** 33 47	**24.** 16 79
25. 24 24 24	**26.** 5 23 64	**27.** 16 5 25	**28.** 23 64 5	**29.** 20 15 8	**30.** 64 32 3
31. 45 33 6	**32.** 8 27 4	**33.** 60 9 6	**34.** 54 33 7	**35.** 15 75 8	**36.** 32 33 34
37. 27 26 25	**38.** 7 5 14	**39.** 15 8 42	**40.** 17 19 3	**41.** 27 7 21	**42.** 57 14 2
43. 35 23 14	**44.** 16 8 20	**45.** 13 46 15	**46.** 64 3 5	**47.** 7 22 8	**48.** 84 7 3

49. $15+3+12+36$
50. $20+30+6+29$
51. $84+6+6$
52. $24+24+24+24$
53. $18+14+12$
54. $11+9+33+20$
55. $64+25+10$
56. $50+20+10$
57. $36+52+1$
58. $75+24$

31. *The sign of subtraction is* $-$.
$5-3=2$ is read, 5 minus 3 equals 2; or, 5 less 3, equals 2.

32. Find answers:

59. $35-20$	60. $64-14$	61. $27-21$	62. $36-15$	63. $36+15$	64. $49+25$
65. $49-25$	66. $75+20$	67. $60-60$	68. $60-40$	69. $75-50$	70. $46+53$
71. $36-25$	72. $38+27$	73. $64+32$	74. $84-42$	75. $15-4$	76. $26+26$
77. $25-5$	78. $37+18$	79. $48-33$	80. $48+33$	81. $72+18$	82. $63-30$

33. Sight Exercises.

Give missing numbers:

1. $2+?=9$
2. $8-4=?$
3. $?-5=4$
4. $?-7=2$
5. $3+?=11$
6. $8+7=?$
7. $9-6=?$
8. $?+5=12$
9. $?-2=7$
10. $8-?=5$
11. $9+3=?$
12. $?-8=2$

34. Original Problems.

Make problems containing the following numbers:

1. 15	2. 9	3. 12	4. 6	5. 15
+ 3	− 4	+ 7	− 3	+ 1
6. 8	7. 8	8. 9	9. 9	10. 8
+ 5	− 4	− 4	+ 5	− 5

35. Oral Problems.

1. William has 8 jackstones, and Mary has 5 jackstones. How many jackstones have both?

2. A grocer has 8 barrels of flour. How many will he have if he sells 4 barrels?

3. A boy has saved 9 cents. If he spends 4 cents for a blank book, how much money will he have?

4. What will be the cost of a 9-cent copy book and a 5-cent bottle of ink?

5. A man buys a coat for $8. He pays $5 in bills, and the remainder in silver. How much does he pay in silver?

36. *The sign* $ *stands for "dollars," and is written before the number.*

37. Slate Problems.

1. What will be the cost of a horse and a wagon if the horse costs $75, and the wagon $20?

$$\begin{array}{r} \$75 \\ +\$20 \\ \hline \end{array}$$

N.B. — Write the proper sign in each case.

2. There are 24 hours in one day. How many hours are there in two days?

$$\begin{array}{r} 24\ h. \\ +24\ h. \\ \hline \end{array}$$

3. We have 60 minutes for reading and spelling. If we take 40 minutes for reading, how much time is left for spelling?

$$\begin{array}{r} 60\ m. \\ -\ 40\ m. \end{array}$$

4. A woman pays 75 cents for tea and coffee. She pays 50 cents for the tea. How much does the coffee cost?

$$\begin{array}{r} 75\text{¢} \\ -\ 50\text{¢} \end{array}$$

5. What is the sum of 56 and 34?

6. A farmer had 37 cows. After he had sold 27 of them, how many did he have?

7. There are 45 trees in an orchard; 25 are apple trees, the rest are peach trees. How many peach trees are there?

8. There are 25 apple trees in an orchard, and 20 peach trees. How many trees are there in the orchard?

9. William had 26 cherries; he gave 13 to Mabel, and the remainder to Julia. How many did he give to Julia?

10. There are 50 yards in a piece of ribbon. How many yards are left after 20 yards are used?

NOTATION AND NUMERATION.

38. The numbers from 1 to 9 are written with one figure.

How many figures do we use in writing the numbers from 10 to 99?

Ninety-nine and one make one hundred, written 100.

Two hundred is written 200; three hundred, 300.

39. Write in figures:

1. Four hundred.
2. Five hundred.
3. Six hundred.
4. Seven hundred.
5. Eight hundred.
6. Nine hundred.

40. Count from one hundred one to one hundred nine. One hundred one is written 101. In writing *hundreds*, we always use three figures.

41. Write in figures:

1. One hundred two.
2. One hundred three.
3. One hundred four.
4. One hundred five.
5. One hundred six.
6. One hundred seven.
7. One hundred eight.
8. One hundred nine.

42. Read the following:

1.	110	120	130	140	150
2.	160	170	180	190	200
3.	300	400	500	600	700
4.	800	900	111	112	113
5.	201	302	403	504	605
6.	706	807	908	121	232
7.	343	454	565	676	787
8.	898	909	123	334	345
9.	456	567	678	789	890

43. Write in figures:

1. Two hundred three.
2. Six hundred ninety-six.
3. Three hundred one.
4. Eighty-four.
5. Four hundred forty.
6. Seven hundred nineteen.
7. Five hundred sixteen.
8. One hundred thirty-four.
9. Six hundred nine.
10. Nineteen.
11. Seven hundred seventy-seven.
12. Eight hundred seventy-six.
13. Eight hundred five.
14. Five hundred ninety-nine.
15. Nine hundred.
16. Seventy-five.

17. Sixteen.
18. Seven hundred.
19. Sixty-eight.
20. Seven hundred twenty.
21. Six hundred eight.
22. Seven hundred three.
23. Nine hundred eighteen.
24. Six hundred forty-three.
25. Two hundred sixty-one.
26. Four hundred fifty-seven.
27. Three hundred eighty-two.
28. Nine hundred nine.

44. 1. Write the number that is one less than a hundred.

2. Write the number that is one more than a hundred.

3. Write the number that is one less than two hundred.

4. Write the number that is one more than three hundred fifty.

5. Write the number that is one less than four hundred twenty.

45. *In the number* 382, 2 *is called the* **units'** *figure*, 8 *is called the* **tens'** *figure*, 3 *is called the* **hundreds'** *figure.*

46. Slate Exercises.

Add:

1. 127	2. 306	3. 288	4. 612	5. 3
243	75	45	196	33
85	4	602	34	333
6. 219	7. 126	8. 175	9. 909	10. 449
62	250	184	44	81
105	484	600	30	314
11. 838	12. 331	13. 38	14. 244	15. 52
123	528	452	42	36
30	86	38	98	35

16. 191	**17.** 864	**18.** 499	**19.** 733	**20.** 169
117	36	32	94	162
40	25	16	106	208
6	50	200	25	40
21. 208	**22.** 875	**23.** 129	**24.** 43	**25.** 9
198	104	421	56	17
30	7	48	58	130
3	11	60	620	91
26. 629	**27.** 97	**28.** 487	**29.** 141	**30.** 635
80	406	110	155	298
3	95	25	203	13
55	201	3	237	43
31. 105	**32.** 162	**33.** 310	**34.** 133	**35.** 429
610	214	375	233	52
51	245	29	33	160
23	104	2	133	41
6	51	40	233	5
36. 523	**37.** 870	**38.** 732	**39.** 521	**40.** 80
62	15	116	108	107
7	8	80	63	35
51	45	7	250	312
5	21	64	6	25
41. 707	**42.** 209	**43.** 123	**44.** 50	**45.** 300
82	186	234	49	50
148	17	45	51	25
1	310	6	638	106
50	3	580	11	84

46. 34	**47.** 210	**48.** 250	**49.** 1	**50.** 512
605	35	300	22	33
21	406	45	333	240
83	21	3	44	16
112	3	27	555	108
31	74	101	20	30

47. Subtract:

1. 876	**2.** 978	**3.** 350	**4.** 391	**5.** 457
234	468	220	280	230
6. 844	**7.** 316	**8.** 999	**9.** 969	**10.** 898
23	5	213	959	886
11. 583	**12.** 499	**13.** 605	**14.** 858	**15.** 667
102	479	300	836	43
16. 577	**17.** 555	**18.** 734	**19.** 986	**20.** 843
543	550	600	886	603
21. 694	**22.** 667	**23.** 162	**24.** 952	**25.** 790
42	310	50	301	740
26. 875	**27.** 649	**28.** 790	**29.** 665	**30.** 838
875	304	500	664	111
31. 598	**32.** 928	**33.** 548	**34.** 928	**35.** 564
508	807	540	18	304

36. 839	**37.** 997	**38.** 864	**39.** 799	**40.** 935
600	95	41	25	630
41. 305	**42.** 889	**43.** 678	**44.** 858	**45.** 936
104	615	667	45	706
46. 477	**47.** 428	**48.** 893	**49.** 855	**50.** 618
253	308	230	5	308

48. Find sums:

51. $33 + 33 + 33 + 33$

52. $22 + 22 + 22 + 22 + 22$

53. $86 + 23 + 2$

54. $100 + 50 + 25 + 25$

55. $216 + 115$

56. $34 + 26 + 101 + 5$

57. $45 + 54 + 3 + 16$

58. $89 + 25 + 103$

59. $75 + 50 + 25$

60. $100 + 50 + 25 + 10 + 5 + 3 + 2 + 1$

49. Find answers:

61. $395 - 123$

62. $684 - 453$

63. $978 - 563$

64. $254 - 24$

65. $857 - 57$

66. $169 - 136$

67. $599 - 286$

68. $783 - 250$

69. $408 - 303$

70. $250 - 130$

50. Sight Exercises.

Give answers:

10 − 9	10 − 1	11 − 2	11 − 9	10 − 5
12 − 3	11 − 8	12 − 9	14 − 7	10 − 2
10 − 8	11 − 3	12 − 6	13 − 9	15 − 6
16 − 8	13 − 8	11 − 4	10 − 3	13 − 5
13 − 4	15 − 9	14 − 5	11 − 5	10 − 4
10 − 6	12 − 8	11 − 6	12 − 7	15 − 7
12 − 5	10 − 7	12 − 4	11 − 7	14 − 8
13 − 7	16 − 9	13 − 6	14 − 9	15 − 8
16 − 7	17 − 8	18 − 9	17 − 9	14 − 6

Drill upon the foregoing frequently and regularly, but not too long at a time.

51. Oral Problems.

1. There are 10 birds on a tree. How many will there be if 5 more come?

2. If there are 11 boys belonging to a class, and 9 are present, how many are absent?

3. Lucy is 12 years old. How old will she be in 3 years?

4. Matthew is 11 years old. How old was he 4 years ago?

5. Patrick has 9 cents in his bank. How many more cents must he put into the bank to have 15 cents in it?

6. Andrew has two pockets in his jacket. He has 8 marbles in each. How many marbles has he?

7. A girl lives 12 houses from the school. After she passes 8 houses, how many more must she pass?

8. At a game of ball there are 9 boys on each side. How many boys are playing?

9. Sarah has 15 cents. If she spends 8 cents for worsted, how much money will she have?

10. A man buys two suits of clothes for his boy; he gives 9 dollars for each suit. How many dollars does he spend?

52. Original Problems.

Give answers. Make problems.

10 + 5	11 − 9	12 + 3	12 − 4	15 − 9
8 + 8	2 + 13	9 − 5	13 − 6	14 − 8
12 + 5	9 + 8	10 + 7	16 + 1	14 + 3
11 − 8	10 − 7	12 − 9	9 + 9	12 + 6

53. Sight Exercises.

Give missing numbers:

4 − ? = 1	6 + ? = 11	3 + ? = 12	? − 7 = 2
? + 5 = 12	12 − ? = 4	14 − 9 = ?	10 − ? = 5
	? − 9 = 5	3 + 5 + ? = 17	

54. Slate Exercises.

Find missing numbers:

1.	2.	3.	4.	5.	6.
29	37	17	86	75	90
+ ?	+ ?	+ ?	+ ?	+ ?	+ ?
41	50	25	90	100	150

SUBTRACTION.

55. From 41 take 29.

Writing the larger number above the smaller, we see that the units' figure 9 of the latter is greater than the other units' figure 1. In this case we say 9 and **2**, writing the **2**, are 11. Carry 1 to 2, making it 3. We then say 3 and **1** are 4, writing the **1**.

$$\begin{array}{r} 41 \\ -\ 29 \\ \hline 12 \end{array}$$

56. From 506 take 274.

$$\begin{array}{r} 506 \\ -\,274 \\ \hline 232 \end{array}$$

4 and 2 are 6, 7 and 3 are 10, (1 + 2) 3 and 2 are 5.

57. *The answer in subtraction is called the* **difference,** *or* **remainder.**

58. Slate Exercises.

Subtract:

1. 60	2. 71	3. 34	4. 58	5. 91
59	68	27	38	79
6. 26	7. 57	8. 48	9. 65	10. 19
18	49	8	15	8
11. 72	12. 92	13. 84	14. 51	15. 63
54	46	42	25	31
16. 72	17. 71	18. 62	19. 60	20. 41
36	3	59	1	40
21. 34	22. 58	23. 91	24. 26	25. 57
7	20	12	8	8
26. 84	27. 65	28. 19	29. 72	30. 51
76	50	11	18	26
31. 63	32. 62	33. 71	34. 60	35. 41
22	3	66	57	1
36. 34	37. 73	38. 25	39. 94	40. 65
17	28	18	47	26
41. 100	42. 110	43. 200	44. 300	45. 100
10	20	11	30	1

46. 400 4	**47.** 500 150	**48.** 500 50	**49.** 500 5	**50.** 600 300
51. 25 6	**52.** 24 17	**53.** 32 16	**54.** 74 18	**55.** 50 25
56. 31 19	**57.** 64 48	**58.** 81 79	**59.** 90 89	**60.** 46 27

59. Find answers:

61. 94 −46	**62.** 48 +46	**63.** 67 −18	**64.** 49 +18	**65.** 18 +49
66. 73 −26	**67.** 47 +26	**68.** 26 +47	**69.** 75 +25	**70.** 100 −25
71. 423 −201	**72.** 576 +423	**73.** 375 −123	**74.** 576 −25	**75.** 375 +5
76. 350 −5	**77.** 214 −7	**78.** 321 −17	**79.** 551 +85	**80.** 75 +252

81. 864 + 99

82. 63 + 307 + 7 + 30

83. 259 + 23 + 104 + 171 + 2

84. 867 − 352

85. 932 − 729

86. 543 − 540

87. 360 − 245

88. 27 + 105 + 316 + 591

89. 17 + 383 + 25 + 2

90. 95 − 85

91. 87 − 57

92. 120 − 90

93. 220 − 190

94. 320 − 190

95. 143 − 134

96. 134 + 9

97. 267 − 258

98. 258 + 9

99. 267 − 9

100. 100 − 97

60. Slate Problems.

101. A man pays $75 for a sofa and $15 for a chair. How much does he pay for both?

102. A boy has 75 pictures; he gives away 15. How many has he then?

103. Find the difference between 25 and 50.

104. A newsboy pays 24 cents for newspapers; he sells them for 40 cents. What is his profit?

105. Two girls have 50 cents between them; one has 15 cents. How many cents has the other?

106. A farmer bought a cow and a pig. The pig cost $15. He paid $35 more for the cow than he did for the pig. What did he pay for the cow?

107. A pig and a cow cost $65; the pig cost $15. How many dollars did the cow cost?

108. Find the sum of 27 cherries and 46 cherries.

109. A boy sold newspapers for 40 cents; he made 16 cents. What did he pay for the papers?

110. A girl bought a doll for 28 cents; she received 22 cents change. How much did she give the storekeeper?

61. Drills.

1. Add by twos:

0, 2, 4, 6, 8, etc., to 40;
1, 3, 5, 7, 9, etc., to 39.

2. Add by threes:

0, 3, 6, 9, 12, etc., to 39;
1, 4, 7, 10, 13, etc., to 40;
2, 5, 8, 11, 14, etc., to 38.

3. Add by fours:

0, 4, 8, etc., to 40; 1, 5, 9, etc., to 37;
2, 6, 10, etc., to 38; 3, 7, 11, etc., to 39.

4. Add by fives:

0, 5, 10, etc., to 40; 1, 6, 11, etc., to 36;
2, 7, 12, etc., to 37; 3, 8, 13, etc., to 38;
4, 9, 14, etc., to 39.

5. Add by sixes:

0, 6, etc., to 36; 1, 7, etc., to 37; 2, 8, etc., to 38;
3, 9, etc., to 39; 4, 10, etc., to 40; 5, 11, etc., to 35.

6. Add by sevens:

0, 7, 14, etc., to 35; 1, 8, 15, etc., to 36;
2, 9, 16, etc., to 37; 3, 10, 17, etc., to 38;
4, 11, etc., to 39; 5, 12, etc., to 40; 6, 13, etc., to 34.

7. Add by eights:

0, 8, etc., to 40; 1, 9, etc., to 33; 2, 10, etc., to 34;
3, 11, etc., to 35; 4, 12, etc., to 36; 5, 13, etc., to 37;
6, 14, 22, etc., to 38; 7, 15, 23, etc., to 39.

8. Add by nines:

0, 9, etc., to 36; 1, 10, etc., to 37; 2, 11, etc., to 38;
3, 12, etc., to 39; 4, 13, etc., to 40; 5, 14, etc., to 32;
6, 15, etc., to 33; 7, 16, etc., to 34; 8, 17, etc., to 35.

62. Sight Exercises.

Give sums:

11 + 9	17 + 6	24 + 7	29 + 5	15 + 8
26 + 8	29 + 9	16 + 6	21 + 9	18 + 7
19 + 5	19 + 4	28 + 8	27 + 5	12 + 8
26 + 6	15 + 5	18 + 6	19 + 3	26 + 7
19 + 9	22 + 9	25 + 5	16 + 9	23 + 8
14 + 6	19 + 6	16 + 7	13 + 7	28 + 9
27 + 9	14 + 9	22 + 8	19 + 8	23 + 7
22 + 8	16 + 5	18 + 9	23 + 9	17 + 9
17 + 7	23 + 9	28 + 5	16 + 8	29 + 4
24 + 6	18 + 5	12 + 9	28 + 4	24 + 9
19 + 7	25 + 9	26 + 5	15 + 9	18 + 4
24 + 8	14 + 8	17 + 5	28 + 7	29 + 8
13 + 9	26 + 6	25 + 8	17 + 8	15 + 7
29 + 7	18 + 8	17 + 4	28 + 6	29 + 3
15 + 6	24 + 6	29 + 6	13 + 8	14 + 7
27 + 8	26 + 9	14 + 7	25 + 6	27 + 7

3	4	5	6	5	6	3	0	4	5
3	4	5	6	3	5	4	5	2	3
3	4	5	6	4	5	5	8	3	6
—	—	—	—	—	—	—	—	—	—

8	0	4	5	2	7	7	5	7	7
7	9	3	5	3	6	5	8	9	7
4	6	7	8	4	5	4	2	3	1
—	—	—	—	—	—	—	—	—	—

63. Slate Exercises.

Subtract:

1. 986 407	**2.** 863 446	**3.** 952 335	**4.** 824 617	**5.** 713 405
6. 930 617	**7.** 584 435	**8.** 653 639	**9.** 724 18	**10.** 683 64
11. 906 860	**12.** 735 595	**13.** 268 74	**14.** 837 40	**15.** 978 881
16. 753 362	**17.** 484 193	**18.** 580 290	**19.** 603 593	**20.** 275 81
21. 666 77	**22.** 423 59	**23.** 384 96	**24.** 275 176	**25.** 803 794
26. 934 576	**27.** 934 467	**28.** 204 197	**29.** 321 123	**30.** 600 321
31. 500 101	**32.** 487 366	**33.** 900 890	**34.** 777 88	**35.** 365 190
36. 400 2	**37.** 378 89	**38.** 600 250	**39.** 301 299	**40.** 484 242
41. 876 678	**42.** 904 873	**43.** 275 196	**44.** 811 790	**45.** 243 99
46. 304 152	**47.** 456 228	**48.** 987 789	**49.** 300 277	**50.** 864 860

64. Add:

51. 389	**52.** 654	**53.** 486	**54.** 289	**55.** 123
75	179	78	289	456
467	98	256	289	78
56. 243	**57.** 123	**58.** 98	**59.** 309	**60.** 798
407	234	567	98	60
65	534	43	470	9
199	56	21	66	54
61. 150	**62.** 333	**63.** 666	**64.** 123	**65.** 257
607	333	66	45	432
23	33	60	678	48
65	33	6	9	109
116	3	6	10	92
66. 369	**67.** 543	**68.** 283	**69.** 394	**70.** 539
72	324	79	247	40
407	99	164	283	298
80	6	450	65	67
24	27	9	6	5
71. 271	**72.** 613	**73.** 355	**74.** 7	**75.** 93
408	84	40	24	404
63	106	86	435	37
150	53	209	60	252
29	70	132	3	60
5	4	43	86	7
76. 345	**77.** 296	**78.** 648	**79.** 639	**80.** 733
96	584	275	25	49
479	78	59	287	88

81. 324	**82.** 649	**83.** 568	**84.** 473	**85.** 209
77	107	37	65	28
468	84	77	65	593
46	99	166	358	84
86. 728	**87.** 186	**88.** 627	**89.** 99	**90.** 821
93	176	72	199	69
43	166	67	299	85
119	156	26	402	19
91. 348	**92.** 47	**93.** 639	**94.** 541	**95.** 283
296	368	82	87	323
84	38	207	48	82
63	396	64	286	23
105	50	55	33	8
96. 246	**97.** 598	**98.** 308	**99.** 247	**100.** 47
85	35	349	89	428
399	164	97	476	390
178	108	65	58	75
3	95	39	33	9
101. 278	**102.** 135	**103.** 70	**104.** 166	**105.** 95
63	79	309	166	50
54	246	88	166	95
459	80	246	166	163
46	399	87	166	88

65. Find remainders:

106. 906	**107.** 450	**108.** 363	**109.** 292	**110.** 888
167	97	187	146	99
111. 789	**112.** 864	**113.** 748	**114.** 789	**115.** 975
236	579	654	327	887

116. 898	117. 837	118. 879	119. 688	120. 629
283	586	783	377	584
121. 606	122. 750	123. 300	124. 274	125. 666
17	509	11	187	88

66. Oral Problems.

1. A boy caught 22 crabs before dinner and 9 after dinner. How many did he catch in all?

2. There are 31 apples on a tree. How many will there be after 28 are picked off?

3. William has paid 5 cents for a ball and has 26 cents left. How much money had he at first?

4. A newsboy sold 28 morning papers and 7 evening papers. How many did he sell in all?

5. A man owes a bill of 15 dollars. How much will he owe after paying 6 dollars?

6. How much will I have to pay for a reader at 18 cents, a slate at 6 cents, and a copy book at 8 cents?

7. There are 24 pages in a primer. John has read 15 pages. How many has he yet to read?

8. A girl has two 10-cent pieces and two 5-cent pieces. How much money has she?

9. There are 11 roses on one bush, 7 on another, and 8 on another. How many are there on the three bushes?

10. If I spend 5 cents for figs, 5 cents for dates, 5 cents for candy, 5 cents for cakes, and 5 cents for a ball, how much do I spend in all?

67. Slate Problems.

1. A farmer pays 65 dollars for a cart and 15 dollars for a plow. How many dollars does he pay for both?

2. How much more does the cart cost than the plow?

3. There are 17 boys in the first row, 19 in the second, 13 in the third, and 16 in the fourth. How many boys are there in the four rows?

4. A man earns 90 dollars a month; he spends 73 dollars. How many dollars does he save?

5. Jane has 27 cents left after spending 23 cents for a reader. How much money had she at first?

6. A scholar added two numbers, and his answer was 60. If one number was 35, what was the other number?

7. A grocer bought sugar for 50 dollars, and tea for 30 dollars. How many dollars did he pay for both?

8. When Mary saves 25 cents more, she will have 70 cents. How much money has she now?

9. 60 boys are working an example; 43 have the correct answer. How many are wrong?

10. A farmer raised 84 bushels of wheat. How many bushels will he have after selling 56 bushels?

CHAPTER II.

MULTIPLICATION AND DIVISION.—UNITED STATES MONEY.—PINT, QUART, AND GALLON.—FRACTIONAL PARTS.—ROMAN NOTATION.

MULTIPLICATION BY 2.

68. Oral Exercises.

How much would 2 three-cent oranges cost?

If 1 orange cost 3 cents, 2 oranges would cost 2 times 3 cents, or 6 cents.

69. What should you pay for 2 postal cards? 2 two-cent stamps? 2 three-cent tops? 2 pints of milk at 4 cents a pint? 2 five-cent base-balls? 2 pounds of sugar at 6 cents a pound? 2 seven-cent dolls? 2 quarts of milk at 8 cents a quart? 2 yards of muslin at 9 cents a yard?

What are two 1's? Two 2's? Two 3's? Two 4's? Two 5's? Two 6's? Two 7's? Two 8's? Two 9's?

70. *The sign of multiplication is* $\times$.

$3 \times 2 = 6$ is read, 3 multiplied by 2 equals 6; or, 2 times 3 are 6.

71. Sight Exercises.

Give answers:

3×2	4×2	6×2	7×2	9×2
10×2	1×2	5×2	2×2	8×2

72. Slate Exercises.

What would be paid for 2 first readers at 13 cents each?

We could find the cost by adding 13 and 13, but the better way is to do such problems by multiplication.

Placing the 2 under the 13, we say, 2 times 3 are 6, 2 times 1 are 2. The answer is 26 cents.

13¢
× 2
26¢

73. *The answer in multiplication is called the* **product.**

74. Find products:

1. 10 × 2	**2.** 11 × 2	**3.** 12 × 2	**4.** 14 × 2	**5.** 20 × 2	**6.** 21 × 2
7. 22 × 2	**8.** 23 × 2	**9.** 24 × 2	**10.** 30 × 2	**11.** 31 × 2	**12.** 32 × 2
13. 33 × 2	**14.** 34 × 2	**15.** 40 × 2	**16.** 41 × 2	**17.** 42 × 2	**18.** 43 × 2
19. 44 × 2	**20.** 100 × 2	**21.** 101 × 2	**22.** 102 × 2	**23.** 103 × 2	**24.** 104 × 2
25. 110 × 2	**26.** 111 × 2	**27.** 112 × 2	**28.** 113 × 2	**29.** 114 × 2	**30.** 123 × 2
31. 124 × 2	**32.** 200 × 2	**33.** 201 × 2	**34.** 203 × 2	**35.** 204 × 2	**36.** 210 × 2
37. 221 × 2	**38.** 232 × 2	**39.** 50 × 2	**40.** 344 × 2	**41.** 423 × 2	**42.** 304 × 2

43. 430	**44.** 242	**45.** 434	**46.** 440	**47.** 324	**48.** 300
2	2	2	2	2	2
49. 400	**50.** 404	**51.** 60	**52.** 51	**53.** 52	**54.** 53
2	2	2	2	2	2
55. 54	**56.** 63	**57.** 64	**58.** 72	**59.** 83	**60.** 94
2	2	2	2	2	2

DIVISION BY 2.

75. Oral Exercises.

If I pay 6 cents for 2 oranges, what is the price of 1 orange?

If 2 oranges cost 6 cents, 1 orange will cost as many cents as there are 2's in 6, or 3 cents.

76. What is the price of a postal card, if 2 postal cards cost 2 cents? Of one postage stamp, if 2 stamps cost 4 cents? Of 1 top, if 2 tops cost 6 cents? Of 1 pint of milk, if 2 pints cost 8 cents? Of 1 base-ball, if 2 balls cost 10 cents? Of 1 pound of sugar, if 2 pounds cost 12 cents? Of 1 doll, if 2 dolls cost 14 cents? Of 1 quart of milk, if 2 quarts cost 16 cents? Of 1 yard of muslin, if 2 yards cost 18 cents?

How many 2's are there in 2? In 4? In 6? In 8? In 10? In 12? In 14? In 16? In 18?

77. *The sign of division is* $\div$.

$6 \div 2 = 3$ is read, 6 divided by 2 equals 3.

78. Sight Exercises.

Give answers:

$6 \div 2$	$8 \div 2$	$12 \div 2$	$14 \div 2$	$18 \div 2$
$20 \div 2$	$10 \div 2$	$2 \div 2$	$16 \div 2$	$4 \div 2$

79. Slate Exercises.

How much will 1 first reader cost, if 2 readers cost 26 cents?

2)26¢
13¢

Write 26; at the left of it place 2. Separate by a curved line. Draw a line underneath. 2 is contained in 2 once. Write 1 under the 2. 2 is contained in 6 three times. Write 3 under the 6. The answer is 13 cents.

80. *The answer in division is called the* **quotient.**

81. Find quotients:

1. 2)20	**2.** 2)22	**3.** 2)24	**4.** 2)28	**5.** 2)40
6. 2)42	**7.** 2)44	**8.** 2)46	**9.** 2)48	**10.** 2)60
11. 2)62	**12.** 2)64	**13.** 2)66	**14.** 2)68	**15.** 2)80
16. 2)82	**17.** 2)84	**18.** 2)86	**19.** 2)88	**20.** 2)200
21. 2)202	**22.** 2)204	**23.** 2)206	**24.** 2)208	**25.** 2)220
26. 2)222	**27.** 2)224	**28.** 2)226	**29.** 2)246	**30.** 2)248
31. 2)400	**32.** 2)402	**33.** 2)406	**34.** 2)408	**35.** 2)420
36. 2)442	**37.** 2)464	**38.** 2)688	**39.** 2)846	**40.** 2)608
41. 2)860	**42.** 2)484	**43.** 2)868	**44.** 2)880	**45.** 2)648
46. 2)600	**47.** 2)800	**48.** 2)808	**49.** 2)100	**50.** 2)102
51. 2)104	**52.** 2)106	**53.** 2)108	**54.** 2)122	**55.** 2)126
56. 2)128	**57.** 2)144	**58.** 2)166	**59.** 2)188	**60.** 2)164

82. Sight Exercises.

Give missing numbers:

1. $8+2=?$
2. $8-2=?$
3. $8\times 2=?$
4. $8\div 2=?$
5. $5\times ?=10$
6. $8\div ?=4$
7. $3+?=11$
8. $9-?=6$
9. $?\times 2=6$
10. $?\div 2=5$
11. $6\times ?=12$
12. $?\times 2=8$

13. $\begin{array}{r} 11 \\ +\,? \\ \hline 17 \end{array}$
14. $\begin{array}{r} ? \\ -\,5 \\ \hline 8 \end{array}$
15. $\begin{array}{r} ? \\ \times\,2 \\ \hline 18 \end{array}$
16. $\begin{array}{r} 16 \\ +\,5 \\ \hline ? \end{array}$
17. $\begin{array}{r} 26 \\ +\,5 \\ \hline ? \end{array}$
18. $\begin{array}{r} 11 \\ \times\,2 \\ \hline ? \end{array}$
19. $\begin{array}{r} 13 \\ -\,? \\ \hline 4 \end{array}$
20. $\begin{array}{r} 10 \\ \times\,? \\ \hline 20 \end{array}$

21. $2)\overline{?}$ $\quad 4$
22. $?)\overline{10}$ $\quad 5$
23. $4)\overline{8}$ $\quad ?$

83. Oral Problems.

1. A girl pays 20 cents for a reader, 10 cents for a blank book, and 5 cents for a slate. How much does she spend?

2. A man buys a coat for $9 and sells it for $13. What is his profit?

3. At 4 cents a pint, what will a quart of milk cost?

NOTE. Have the pupils learn by experiment that there are 2 pints in a quart.

4. If I can buy 2 marbles for 1 cent, how much will I pay for 6 marbles?

5. What will be the cost of two 11-cent bars of soap?

6. Two boys are talking about their ages. The 13-year-old boy says he is 4 years older than the other. How old is the other?

7. What will be the cost of a pint of syrup, if a quart costs 16 cents?

8. John has 6 marbles, and his brother has 4. How many will John have to give his brother so that both may have the same number?

9. If there are 12 things in a dozen, how many are there in half a dozen?

10. Mary buys a doll for 19 cents and has 6 cents left. How much money did she have at first?

NOTE. Answers to oral problems should be written on slates or paper, by all pupils, at a given signal.

84. Slate Problems.

1. A boy pays 40 cents for a drum and 2 cents for a kite. How many cents does he pay for both?

2. Mr. Jones has $40 in bank. After taking out $2, how much money has he in bank?

3. How much did Mrs. Smith pay for 2 dolls that cost 40 cents each?

4. I paid $40 for 2 cows. How many dollars did each cost?

5. A man pays 40 cents for a pound of tea, and sells it for 55 cents. What is his profit?

6. A person uses 60 pints of milk in a month. How many quarts does he use?

7. John has 40 cherries; he gives one-half of them to James. How many cherries does he give James?

8. There are 45 roses on one bush, and 35 on another. How many are there on both?

9. What will I pay for 2 pounds of butter at 32 cents a pound?

10. What will be the cost of half a pound of 60-cent tea?

11. A boy had 66 fire-crackers; he gave one-third of them to his cousin. How many did he give to his cousin?

12. How much will I have to pay for 4 straw hats at 22 cents each?

13. How many wings have 21 geese?

14. If there are 50 torpedoes in a pack, how many are there in $\frac{1}{2}$ pack?

NOTATION AND NUMERATION.

85. The largest number we can write with three figures is 999. The next number is one thousand, written 1,000.

Two thousand; 2,000.	Three thousand, 3,000.
Four thousand, 4,000.	Five thousand, 5,000.
Six thousand, 6,000.	Seven thousand, 7,000.
Eight thousand, 8,000.	Nine thousand, 9,000.

One thousand one is written 1,001.

86. Write in figures:

1. One thousand two.
2. Two thousand three.
3. Three thousand four.
4. Four thousand five.
5. Five thousand six.
6. Six thousand eight.
7. Seven thousand nine.
8. Eight thousand ten.

87. Read the following:

1. 1,020.	6. 1,100.	11. 1,000.	16. 1,110.	21. 5,555.
2. 1,030.	7. 2,300.	12. 1,001.	17. 1,111.	22. 6,666.
3. 2,040.	8. 9,900.	13. 1,010.	18. 2,222.	23. 7,777.
4. 3,045.	9. 6,700.	14. 1,100.	19. 3,333.	24. 8,888.
5. 4,050.	10. 8,600.	15. 1,101.	20. 4,444.	25. 9,999.

88. Write in figures:

1. Three thousand four hundred fifty-six.
2. Seven thousand eighty-four.
3. Six hundred nine.
4. Two thousand fourteen.
5. One thousand ninety-nine.
6. Nine thousand five hundred forty-three.
7. Sixty-seven.
8. Four hundred eighty.
9. Five thousand seven.
10. Two hundred nineteen.
11. Eight thousand eighty-eight.
12. One thousand eight hundred ninety-two.
13. Four thousand seven hundred.
14. Three thousand six hundred sixty-three.
15. Six thousand sixty.
16. Nine thousand eight hundred seventy-six.
17. Three hundred eleven.
18. Seven thousand nine hundred nine.
19. Six thousand five hundred forty-three.
20. Two thousand one hundred two.

89. Read the following:

1.	1,365	10.	1,054	19.	75	28.	2,673	37.	508
2.	2,950	11.	254	20.	4,536	29.	6,758	38.	3,141
3.	437	12.	4,400	21.	4,347	30.	9,058	39.	7,001
4.	2,965	13.	154	22.	7,720	31.	154	40.	5,191
5.	234	14.	9,000	23.	6,525	32.	1,567	41.	3,008
6.	3,386	15.	3,108	24.	627	33.	1,864	42.	84
7.	6,676	16.	988	25.	6,182	34.	309	43.	600
8.	9,875	17.	1,030	26.	2,004	35.	1,892	44.	1,023
9.	4,370	18.	7,005	27.	9,760	36.	1,805	45.	1,067

90. *The right-hand figure is called the* **units'** *figure, the next is called the* **tens'** *figure, the next is called the* **hundreds'** *figure, the next is called the* **thousands'** *figure.*

91. A comma is generally placed between the thousands' figure and the hundreds' figure.

92. NOTE. To secure accuracy and rapidity abstract examples in addition and in subtraction should be worked each day.

93. Review. Slate Exercises.

Find sums:

1. $1{,}406 + 789 + 3{,}008 + 57 + 259 + 80$
2. $954 + 2{,}309 + 16 + 756 + 64 + 1{,}891 + 5$
3. $2{,}345 + 123 + 67 + 8 + 90 + 321 + 5{,}432$
4. $87 + 6 + 430 + 29 + 7{,}856 + 379$
5. $473 + 25 + 389 + 4{,}500 + 98 + 1{,}267 + 18$

94. Find remainders:

6. $8{,}763 - 6{,}549$
7. $2{,}345 - 568$
8. $3{,}800 - 968$
9. $5{,}806 - 1{,}467$
10. $9{,}000 - 8{,}999$
11. $7{,}654 - 987$
12. $4{,}004 - 2{,}345$
13. $3{,}000 - 2{,}875$
14. $6{,}000 - 27$
15. $4{,}386 - 2{,}998$

95. Find products:

16. 144×2
17. $1{,}234 \times 2$
18. 613×2
19. 304×2
20. $4{,}031 \times 2$
21. $2{,}304 \times 2$
22. $4{,}321 \times 2$
23. 723×2
24. 800×2
25. 514×2

96. Find quotients:

26. $288 \div 2$	**31.** $8{,}624 \div 2$
27. $4{,}608 \div 2$	**32.** $1{,}600 \div 2$
28. $2{,}468 \div 2$	**33.** $1{,}028 \div 2$
29. $608 \div 2$	**34.** $1{,}226 \div 2$
30. $8{,}062 \div 2$	**35.** $1{,}446 \div 2$

97. Find products:

1. 12	**2.** 13	**3.** 14	**4.** 15	**5.** 16	**6.** 17
2	2	2	2	2	2

98. Find answers:

7. $24 \div 2$	**11.** $34 \div 2$	**15.** $52 \div 2$
8. $26 \div 2$	**12.** $38 \div 2$	**16.** 27×2
9. $28 \div 2$	**13.** 25×2	**17.** 28×2
10. $30 \div 2$	**14.** $50 \div 2$	**18.** $58 \div 2$

99. Find products:

19. 34	**20.** 35	**21.** 36	**22.** 38	**23.** 39	**24.** 45
2	2	2	2	2	2
25. 47	**26.** 54	**27.** 55	**28.** 63	**29.** 66	**30.** 75
2	2	2	2	2	2

100. Find quotients:

31. $2\overline{)68}$	**32.** $2\overline{)70}$	**33.** $2\overline{)72}$	**34.** $2\overline{)76}$
35. $2\overline{)78}$	**36.** $2\overline{)90}$	**37.** $2\overline{)94}$	**38.** $2\overline{)108}$
39. $2\overline{)110}$	**40.** $2\overline{)126}$	**41.** $2\overline{)132}$	**42.** $2\overline{)150}$

101. Find answers:

43. $210 \div 2$	**47.** 206×2
44. 105×2	**48.** $612 \div 2$
45. 116×2	**49.** 308×2
46. $252 \div 2$	**50.** $816 \div 2$

102. Find products:

51. 150 × 2	**52.** 155 × 2	**53.** 166 × 2	**54.** 177 × 2	**55.** 188 × 2
56. 199 × 2	**57.** 256 × 2	**58.** 367 × 2	**59.** 478 × 2	**60.** 579 × 2
61. 680 × 2	**62.** 709 × 2	**63.** 888 × 2	**64.** 999 × 2	**65.** 1,025 × 2
66. 2,150 × 2	**67.** 3,075 × 2	**68.** 3,568 × 2	**69.** 4,537 × 2	**70.** 4,896 × 2

103. Find quotients:

71. $300 \div 2$	**75.** $376 \div 2$	**79.** $956 \div 2$	**83.** $1,776 \div 2$
72. $310 \div 2$	**76.** $398 \div 2$	**80.** $1,158 \div 2$	**84.** $1,998 \div 2$
73. $332 \div 2$	**77.** $512 \div 2$	**81.** $1,360 \div 2$	**85.** $2,050 \div 2$
74. $354 \div 2$	**78.** $734 \div 2$	**82.** $1,418 \div 2$	**86.** $4,300 \div 2$

87. $6,150 \div 2$ **88.** $9,792 \div 2$

104. Drill Exercises.

Multiply:

1. 3 × 1	**2.** 1 × 3	**3.** 3 × 2	**4.** 2 × 3	**5.** 3 × 3
6. **4** × **2**	**7.** **2** × **4**	**8.** **5** × **2**	**9.** **10** × **8**	**10.** **20** × **8**

11. 30 × 3	12. 11 × 3	13. 12 × 3	14. 13 × 3	15. 21 × 3
16. 22 × 3	17. 23 × 3	18. 31 × 3	19. 32 × 3	20. 33 × 3
21. 101 × 3	22. 102 × 3	23. 103 × 3	24. 111 × 3	25. 112 × 3
26. 113 × 3	27. 120 × 3	28. 121 × 3	29. 122 × 3	30. 123 × 3
31. 200 × 3	32. 201 × 3	33. 202 × 3	34. 203 × 3	35. 210 × 3
36. 212 × 3	37. 213 × 3	38. 220 × 3	39. 221 × 3	40. 222 × 3
41. 223 × 3	42. 130 × 3	43. 131 × 3	44. 132 × 3	45. 331 × 3
46. 230 × 3	47. 231 × 3	48. 233 × 3	49. 321 × 3	50. 333 × 3
51. 1,231 × 3	52. 2,312 × 3	53. 10 × 4	54. 20 × 4	55. 11 × 4
56. 21 × 4	57. 12 × 4	58. 22 × 4	59. 100 × 4	60. 101 × 4
61. 102 × 4	62. 200 × 4	63. 201 × 4	64. 202 × 4	65. 111 × 4
66. 112 × 4	67. 210 × 4	68. 211 × 4	69. 212 × 4	70. 221 × 4

71.	222	72.	1,202	73.	2,101	74.	20	75.	20
	4		4		4		5		6
76.	20	77.	20	78.	20	79.	21	80.	21
	7		8		9		5		6
81.	21	82.	21	83.	21	84.	100	85.	101
	7		8		9		5		6
86.	200	87.	201	88.	101	89.	201	90.	200
	7		8		9		5		6
91.	201	92.	211	93.	111	94.	1,101	95.	1,100
	7		8		9		5		6
96.	1,110	97.	1,111	98.	1,101	99.	1,001	100.	1,000
	7		8		9		9		8

105. Divide:

101.	$3 \div 3$	114.	$66 \div 3$	127.	$84 \div 4$	140.	$147 \div 7$
102.	$6 \div 3$	115.	$96 \div 3$	128.	$48 \div 4$	141.	$160 \div 8$
103.	$9 \div 3$	116.	$69 \div 3$	129.	$40 \div 4$	142.	$180 \div 9$
104.	$4 \div 4$	117.	$99 \div 3$	130.	$80 \div 4$	143.	$189 \div 9$
105.	$8 \div 4$	118.	$303 \div 3$	131.	$400 \div 4$	144.	$1,212 \div 6$
106.	$30 \div 3$	119.	$309 \div 3$	132.	$484 \div 4$	145.	$1,477 \div 7$
107.	$60 \div 3$	120.	$336 \div 3$	133.	$884 \div 4$	146.	$1,680 \div 8$
108.	$90 \div 3$	121.	$369 \div 3$	134.	$50 \div 5$	147.	$1,890 \div 9$
109.	$33 \div 3$	122.	$963 \div 3$	135.	$100 \div 5$	148.	$1,005 \div 5$
110.	$36 \div 3$	123.	$639 \div 3$	136.	$105 \div 5$	149.	$1,050 \div 5$
111.	$39 \div 3$	124.	$390 \div 3$	137.	$60 \div 6$	150.	$1,010 \div 5$
112.	$63 \div 3$	125.	$3,693 \div 3$	138.	$120 \div 6$	151.	$1,616 \div 8$
113.	$93 \div 3$	126.	$44 \div 4$	139.	$126 \div 6$	152.	$1,818 \div 9$

106. Oral Problems.

1. A boy had an apple, and he ate one-quarter of it. How much had he left?

2. If one-half pound of raisins costs 8 cents, what is the price of a pound?

3. William had 8 marbles and lost one-fourth of them. How many did he lose?

4. A confectioner sold 4 boxes of candy. How many pounds did he sell if each box held a quarter of a pound?

5. How much does a half-pound of candy cost, if a quarter-pound costs 5 cents?

6. How much must be paid for 9 pounds of meal at 2 cents a pound?

7. If oil is 8 cents a gallon, how many gallons can I buy for 16 cents?

8. I paid 7 cents for one cake, and 7 cents for another, and 7 cents for another. How much did I pay for three cakes?

9. How many feet have 10 ducks?

10. A watch costs 75 dollars, and the chain costs 5 dollars. What is the cost of both?

107. Slate Problems.

1. If there are 11 trees in one row, how many trees are there in 9 rows?

2. When flour is 4 cents a pound, how many pounds can I buy for 44 cents?

3. A man earns 22 dollars a week. How much does he earn in 3 weeks?

4. How many oranges in 4 dozen?

5. A grocer had 90 eggs. How many would he have after selling a dozen?

6. If tea is worth 30 cents a half-pound, how much is a pound worth?

7. There are 48 boys in the second class; one-quarter of them have a wrong answer to a problem. How many have a wrong answer?

8. Mary has 21 postage stamps. Julia has four times as many. How many has Julia?

9. A newsboy sold papers for 75 cents and gained 19 cents. How much did the papers cost?

10. How many feet have 20 cows?

MULTIPLICATION BY 3.

108. Oral Exercises.

What is the cost of 3 postal cards? 3 two-cent stamps? 3 three-cent tops? 3 pints of milk at four cents a pint? 3 five-cent base-balls? 3 pounds of sugar at six cents a pound? 3 seven-cent dolls? 3 quarts of milk at eight cents a quart? 3 yards of muslin at nine cents a yard?

109. Sight Exercises.

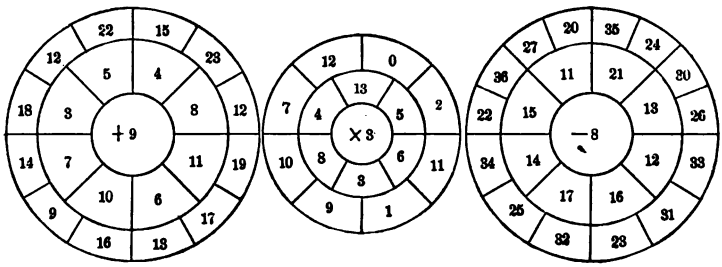
Give answers:

3×4	4×2	7×0	6×2	2×8	8×3
2×9	6×3	0×9	3×6	5×1	9×2
0×3	3×5	1×0	2×7	3×1	2×2
2×4	1×9	3×8	2×5	6×0	4×3
1×1	0×5	2×6	1×8	0×7	8×1
8×2	5×3	7×3	3×9	1×6	4×0
2×1	1×2	0×8	9×0	3×3	0×1
3×2	0×2	1×5	7×2	1×7	9×3
1×4	5×2	8×0	0×6	2×0	5×0
3×0	4×1	2×3	7×1	6×1	1×3
	0×0	9×1	0×4	3×7	

110. Accuracy and rapidity in subsequent work are largely dependent upon the thoroughness of drill in the addition, subtraction, multiplication, and division combinations in the lower grades. To avoid the labor of writing on the board combinations similar to the foregoing, several devices are resorted to.

111. Drills.

Drill upon the following, changing, from time to time, the numbers in the inmost circles:



112. Change, from time to time, the figure in the second line:

5	15	25	35	45	55	65	75	85
+6			(Add 7, 8, 9.)					
6	16	26	36	46	56	66	76	86
+5			(Add 6, 7, 8, 9.)					
7	17	27	37	47	57	67	77	87
+4			(Add 5, 6, 7, 8, 9.)					
8	18	28	38	48	58	68	78	88
+3			(Add 4, 5, 6, 7, 8, 9.)					
9	19	29	39	49	59	69	79	89
+2			(Add 3, 4, 5, 6, 7, 8, 9.)					

113. NOTE. Insist upon rapidity in answers. Have *short* daily drills if possible.

114. Worcester Public Schools. — Examination Questions.

1. How many cents are there in a dime? In a half-dime? In a quarter of a dollar?

2. Count by 2's to 10.

3. Ella has 4 cherries. If she gives half of them to Harry, how many will he have?

4. On my bushes there are 5 red roses, 4 pink roses, and 3 white roses. How many roses are there in all?

5. What is $\frac{1}{3}$ of 6? $\frac{1}{2}$ of 10? $\frac{1}{4}$ of 8? $\frac{1}{3}$ of 9?

6. What are the figures for VI, IX, VII, II, X?

7. If 1 banana cost 2 cents, what will 5 bananas cost?

8. If an apple cost 2 cents, how many apples can you buy for 8 cents?

9. Frank went to the store with a dime. He bought a five-cent ball and 2 cents' worth of candy. How much change did he receive?

10.

4	4	1
$+5$	$+2$	$+7$
$\div 3$	$+4$	-5
$\times 2$	$\div 5$	$+4$
-4	$\times 1$	-6

11. Alice earns 2 cents every day, except Sunday, for a week. She puts 10 cents of it into her bank, and spends the rest. How much does she spend?

12. How many pints are there in 3 quarts?

13. Mary has a dime, a two-cent piece, and 3 pennies. How much money has she?

14. How much more is $4 + 3 - 2$ than $2 + 8 - 6$?

15. How many inches are there in a foot? How many feet in a yard? How many inches in a yard?

115. Carrying Drills.

The following is a drill in multiplying and carrying:

								+1
1	2	3	4	5	6	7	8	9
								×2

Write the numbers from 1 to 9 on the board. Underneath, place a multiplier; above, place a number to be added to the product of the multiplier and a number in the second line.

Placing the pointer at 6, the pupil says 12, 13. At 9, he says 18, 19.

Change the multiplier to 3.

When the teacher points to 5, the pupil says 15, 16. When she points to 8, the pupil says 24, 25.

Change the carrying figure to 2.

Pointing to 6, the reply is 18, 20; to 7, it is 21, 23; etc.

In multiplying by 3, the carrying figure cannot be greater than 2. In multiplying by 4, the carrying figure will be 1, 2, or 3.

NOTE. This drill must be rapid to be effective.

116. Slate Exercises.

Multiply:

1. 63 × 3	2. 84 × 3	3. 168 × 3	4. 126 × 3	5. 37 × 3
6. 96 × 3	7. 1,057 × 3	8. 368 × 3	9. 1,369 × 3	10. 2,090 × 3
11. 324 × 3	12. 543 × 3	13. 568 × 3	14. 230 × 3	15. 621 × 2
16. 345 × 3	17. 232 × 4	18. 517 × 3	19. 803 × 2	20. 182 × 3
21. 246 × 3	22. 331 × 4	23. 320 × 4	24. 157 × 3	25. 628 × 3

26. 341 × 3	27. 4,271 × 2	28. 2,415 × 3	29. 1,230 × 4	30. 1,223 × 4
31. 2,627 × 3	32. 2,514 × 3	33. 2,332 × 4	34. 1,203 × 4	35. 4,583 × 2
36. 1,333 × 4	37. 1,201 × 5	38. 1,012 × 6	39. 1,230 × 7	40. 1,572 × 3
41. 1,210 × 8	42. 1,203 × 4	43. 2,233 × 4	44. 3,261 × 3	45. 1,986 × 3
46. 1,387 × 3	47. 2,203 × 4	48. 2,898 × 3	49. 1,837 × 3	50. 3,586 × 2
51. 2,879 × 3	52. 2,887 × 3	53. 1,023 × 9	54. 2,428 × 3	55. 2,937 × 3
56. 2,459 × 3	57. 4,287 × 2	58. 1,606 × 3	59. 1,682 × 3	60. 2,915 × 3

DIVISION BY 3.

117. Slate Exercises.

Divide the following numbers by 2; by 3.

61. 144	67. 408	73. 312	79. 324	85. 4,116
62. 432	68. 372	74. 216	80. 156	86. 5,328
63. 300	69. 192	75. 336	81. 384	87. 3,012
64. 228	70. 348	76. 288	82. 420	88. 1,764
65. 276	71. 396	77. 204	83. 1,188	89. 7,776
66. 264	72. 168	78. 180	84. 8,904	90. 6,552

118. Slate Exercises. — Review.

Find sums:

91. 4,632 + 936 + 788 + 39 + 888 + 6 + 25 + 999.

92. 2,004 + 678 + 59 + 384 + 90 + 1,508 + 77.

93. 5 + 38 + 957 + 1,836 + 2,793 + 858 + 99 + 4.

94. 287 + 1,085 + 329 + 5,908 + 672 + 84 + 93.

95. 64 + 317 + 290 + 4,926 + 3,007 + 215.

119. Find differences:

NOTE. The smaller number (the *subtrahend*) must be taken from the larger number (the *minuend*).

96. 9,000 and 8,743.

97. 7,327 and 9,004.

98. 6,326 and 5,749.

99. 3,520 and 2,780.

100. 383 and 500.

101. 8,888 and 9,200.

102. 1,711 and 1,682.

103. 333 and 1,212.

104. 27 and 2,700.

105. 4,837 and 2,958.

120. Oral Problems.

1. There are 3 rows of desks in the school-room, and 9 desks in each row. How many desks are there in the room?

2. If there are 16 ounces in a pound, how many ounces are there in half a pound?

3. A storekeeper sold 15 hats Monday, 9 on Tuesday, 7 Wednesday, 10 Thursday. How many did he sell in four days?

4. A woman has 18 yards of silk. She uses 5 yards. How many yards has she left?

5. **At 8 for a cent, how many marbles can be bought** for 6 **cents?**

6. What will be the cost of a pint of maple syrup if a quart is worth 22 cents?

7. There are 4 quarts in a gallon. How many pints are there in a gallon?

8. How many feet have 12 ducks?

9. If a 12-cent pie is divided into 3 equal pieces, what is each piece worth?

10. John is 9 years old, and Mary is 16. What is the difference between their ages?

121. Slate Problems.

1. Mary weighs 36 pounds, and Sarah weighs 55 pounds. How much do both weigh?

2. What is the difference between their weights?

3. A confectioner sells ice-cream for 80 cents a half gallon. What is the price of a quart?

4. At 3 for a cent, what will be the cost of 48 marbles?

5. How much must I pay for 4 sheep that cost $13 each?

6. I buy 27 cents' worth of groceries, and give the storekeeper a 50-cent piece. How much change should I receive?

7. What will be the cost of a pound of 60-cent tea and 25 cents' worth of eggs?

8. A bag of flour contains 49 pounds. How many pounds of flour are there in 2 bags?

9. If meal costs 2 cents a pound, how many pounds can I buy for 50 cents?

10. If you divide 54 marbles equally among 3 boys, how many will each receive?

122. Slate Exercises.

Multiply:

1. 123 × 5	2. 213 × 6	3. 312 × 7	4. 321 × 8	5. 132 × 9
6. 231 × 5	7. 103 × 6	8. 102 × 7	9. 203 × 8	10. 302 × 9
11. 111 × 5	12. 222 × 6	13. 333 × 7	14. 122 × 8	15. 133 × 9
16. 233 × 5	17. 322 × 6	18. 332 × 7	19. 223 × 8	20. 232 × 9

123. Divide —

By 5:

21. 660	22. 1,510	23. 1,665	24. 1,160	25. 1,115

By 6:

26. 732	27. 1,218	28. 1,926	29. 1,872	30. 612

By 7:

31. 2,331	32. 2,324	33. 2,254	34. 1,554	35. 721

By 8:

36. 1,704	37. 984	38. 1,848	39. 888	40. 1,864

By 9:

41. 1,188	42. 1,827	43. 2,997	44. 2,898	45. 2,097

MULTIPLICATION BY 4.

124. Oral Exercises.

What will 4 pints of milk cost at 4 cents a pint? 4 five-cent base-balls? 4 pounds of sugar at 6 cents a pound? 4 seven-cent dolls? 4 quarts of milk at 8 cents a quart? 4 yards of muslin at 9 cents a yard?

125. Sight Exercises.

Give answers:

4×9	4×6	4×8	4×7	4×5
2×9	2×8	2×7	2×6	2×5
3×5	3×6	3×7	3×8	3×9
5×4	6×4	7×4	8×4	9×4

126. Slate Exercises.

Multiply:

1. 873 × 4	**2.** 456 × 4	**3.** 659 × 4	**4.** 175 × 4	**5.** 999 × 2
6. 754 × 3	**7.** 234 × 9	**8.** 123 × 8	**9.** 304 × 7	**10.** 432 × 6
11. 324 × 5	**12.** 1,369 × 4	**13.** 2,468 × 4	**14.** 1,876 × 4	**15.** 1,775 × 4
16. 1,989 × 4	**17.** 1,563 × 4	**18.** 1,670 × 4	**19.** 1,078 × 4	**20.** 1,123 × 5
21. 2,084 × 4	**22.** 2,167 × 4	**23.** 2,299 × 4	**24.** 2,308 × 4	**25.** 1,323 × 6
26. 2,359 × 4	**27.** 2,287 × 4	**28.** 2,389 × 4	**29.** 2,167 × 4	**30.** 1,023 × 9
31. 2,579 × 3	**32.** 4,987 × 2	**33.** 3,065 × 3	**34.** 1,888 × 4	**35.** 1,203 × 6
36. 3,287 × 8	**37.** 1,340 × 6	**38.** 1,044 × 8	**39.** 1,243 × 7	**40.** 342 × 9

41. 4,576 × 2	42. 2,985 × 3	43. 1,670 × 4	44. 2,058 × 4	45. 2,305 × 4
46. 333 × 6	47. 444 × 8	48. 222 × 7	49. 333 × 6	50. 444 × 5

DIVISION BY 4.

127. Slate Exercises.

51. 1,876	59. 9,864	67. 1,732	75. 9,024	83. 1,992
52. 2,392	60. 8,512	68. 2,592	76. 8,352	84. 2,764
53. 3,572	61. 7,836	69. 3,176	77. 7,164	85. 3,408
54. 4,580	62. 6,788	70. 4,232	78. 6,380	86. 4,248
55. 8,368	63. 5,696	71. 5,916	79. 5,024	87. 5,760
56. 5,660	64. 4,372	72. 6,972	80. 4,928	88. 6,928
57. 7,704	65. 3,504	73. 7,324	81. 3,716	89. 7,004
58. 9,980	66. 2,768	74. 8,948	82. 2,056	90. 8,312

128. Review.

Divide by 2:

91. 9,876	92. 8,954	93. 7,368	94. 6,598	95. 5,760

By 3:

96. 3,897	97. 8,766	98. 7,353	99. 6,201	100. 5,706

By 4:

101. 5,488	102. 6,372	103. 8,680	104. 9,508	105. 7,716

By 5:

106. 2,150	107. 2,020	108. 7,205	109. 6,170	110. 6,710

By 6:

111. 8,466	112. 8,652	113. 7,218	114. 7,872	115. 8,418

By 7:

116. 9,114 **117.** 8,428 **118.** 7,168 **119.** 9,338 **120.** 9,170

By 8:

121. 9,920 **122.** 8,824 **123.** 9,792 **124.** 9,632 **125.** 3,544

By 9:

126. 2,736 **127.** 3,618 **128.** 2,826 **129.** 9,306 **130.** 9,936

129. Add:

131. 3,478 + 384 + 965 + 29 + 450 + 1,873 + 685.

132. 5,883 + 938 + 652 + 36 + 507 + 1,003 + 279.

133. 2,476 + 1,259 + 2,647 + 309 + 875 + 33 + 8.

134. 3,487 + 844 + 2,036 + 392 + 87 + 64 + 386.

135. 589 + 847 + 1,634 + 2,801 + 689 + 2,256.

136. 1,799 + 896 + 327 + 683 + 2,549 + 1,286.

137. 632 + 583 + 238 + 289 + 1,586 + 37 + 9.

138. 3,237 + 654 + 538 + 283 + 1,439 + 256.

139. 1,438 + 567 + 36 + 9 + 57 + 486 + 4,008.

140. 2,376 + 462 + 756 + 49 + 385 + 427 + 2,603.

130. Find differences between:

141. 9,000 and 8,790.

142. 6,034 and 8,043.

143. 8,006 and 7,999.

144. 3,264 and 5,310.

145. 6,543 and 9,001.

146. 4,350 and 2,670.

147. 5,432 and 6,021.

148. 8,493 and 8,530.

149. 2,777 and 9,843.

150. 7,654 and 6,789.

131. Oral Problems.

1. How many balls are there in 4 Roman candles, each containing 8 balls?

2. There are 27 boys in the first division and 10 in the second division. How many are there in both?

3. A boy works 9 examples a day. How many does he work in 4 days?

4. What will be paid for one-fourth of a yard of ribbon at 40 cents a yard?

5. A man walks 28 miles in 7 hours. How many miles does he walk in 1 hour?

6. What will be the cost of 8 yards of cloth at $4 per yard?

7. A boy found 4 marbles and then had 32. How many had he at first?

8. John paid 36 cents for a book and 4 cents for a slate. How many cents did he pay for both?

9. Mary had 18 jackstones. How many had she after giving 3 to Jane?

10. Harry is 8 years old. In how many years will he be 12?

132. Slate Problems.

1. If 4 marbles are sold for 1 cent, how much will 8 marbles cost? How much will 88 cost?

2. A boy bought 3 readers. He paid 15 cents for one, 16 cents for another, 17 cents for the third. How many cents did he pay for the three?

3. What will 3 readers cost at 16 cents each?

4. There are 24 hours in a day. How many hours are there in 4 days?

5. A boy paid 80 cents for 4 pounds of candy. How much did it cost a pound?

6. A farmer has 96 cows in 3 stables, the same number in each. How many are there in each stable?

7. How much will I have to pay for 2 suits of clothes at $35 each?

8. There were 90 sheep in a flock; 14 of them died. How many were there in the flock then?

9. How many pounds of butter are there in 2 tubs, each containing 48 pounds?

10. Two boys weigh together 90 pounds. One of them weighs 35 pounds. How much does the other weigh?

MULTIPLICATION BY 5.

133. Oral Exercises.

What is the cost of 5 five-cent base-balls? Of 5 pounds of sugar at six cents a pound? Of 5 seven-cent dolls? 5 quarts of milk at eight cents a quart? 5 yards of muslin at nine cents a yard?

134. Slate Exercises.

Multiply by 5:

1.	27	13.	287	25.	1,263	37.	1,596	49.	1,740
2.	36	14.	309	26.	1,315	38.	1,582	50.	1,763
3.	44	15.	456	27.	1,338	39.	1,539	51.	1,820
4.	50	16.	578	28.	1,367	40.	1,566	52.	1,808
5.	63	17.	699	29.	1,395	41.	1,698	53.	1,895
6.	72	18.	783	30.	1,384	42.	1,605	54.	1,886
7.	85	19.	859	31.	1,467	43.	1,627	55.	1,830
8.	96	20.	938	32.	1,479	44.	1,635	56.	1,999
9.	105	21.	1,057	33.	1,408	45.	1,672	57.	1,904
10.	126	22.	1,163	34.	1,460	46.	1,776	58.	1,960
11.	148	23.	1,285	35.	1,483	47.	1,709	59.	1,974
12.	169	24.	1,208	36.	1,507	48.	1,785	60.	1,953

Multiply by 2:

61. 4,875	**62.** 3,876	**63.** 2,594	**64.** 3,687	**65.** 4,908

By 3:

66. 3,209	**67.** 3,165	**68.** 3,097	**69.** 2,986	**70.** 2,895

By 4:

71. 2,409	**72.** 2,386	**73.** 2,095	**74.** 1,983	**75.** 1,878

By 5:

76. 1,954	**77.** 1,837	**78.** 1,789	**79.** 1,605	**80.** 1,588

By 6:

81. 1,504	**82.** 1,423	**83.** 1,305	**84.** 1,250	**85.** 1,354

By 7:

86. 1,405	**87.** 1,425	**88.** 1,054	**89.** 1,235	**90.** 1,043

By 8:

91. 1,205	**92.** 1,125	**93.** 1,053	**94.** 1,235	**95.** 1,143

By 9:

96. 1,054	**97.** 1,032	**98.** 1,044	**99.** 1,105	**100.** 1,025

DIVISION BY 5.

135. Slate Exercises.

Divide by 5:

101. 600	**111.** 1,360	**121.** 2,485	**131.** 5,385	**141.** 9,120
102. 650	**112.** 1,475	**122.** 2,590	**132.** 5,715	**142.** 9,215
103. 700	**113.** 1,510	**123.** 2,600	**133.** 6,205	**143.** 9,360
104. 750	**114.** 1,635	**124.** 2,730	**134.** 6,790	**144.** 9,425
105. 875	**115.** 1,770	**125.** 2,855	**135.** 7,325	**145.** 9,580
106. 905	**116.** 1,820	**126.** 2,905	**136.** 7,780	**146.** 9,675
107. 920	**117.** 1,945	**127.** 3,060	**137.** 8,750	**147.** 9,780
108. 1,090	**118.** 2,010	**128.** 3,585	**138.** 8,765	**148.** 9,895
109. 1,120	**119.** 2,265	**129.** 4,070	**139.** 8,910	**149.** 9,905
110. 1,215	**120.** 2,350	**130.** 4,290	**140.** 9,015	**150.** 9,995

By 2:

151. 9,818 152. 8,980 153. 7,756 154. 6,196 155. 8,016

By 3:

156. 8,919 157. 9,504 158. 8,766 159. 9,153 160. 7,695

By 4:

161. 9,516 162. 8,724 163. 6,432 164. 8,756 165. 9,792

By 5:

166. 6,535 167. 5,250 168. 4,875 169. 6,390 170. 7,205

By 6:

171. 8,124 172. 7,500 173. 7,830 174. 8,538 175. 9,024

By 7:

176. 9,835 177. 9,975 178. 7,378 179. 8,645 180. 7,301

By 8:

181. 9,000 182. 8,424 183. 9,880 184. 9,144 185. 9,640

By 9:

186. 9,225 187. 9,945 188. 9,396 189. 9,288 190. 9,486

136. United States Money.

In writing dollars and cents, the dollar sign, $, is written first, followed by the number of dollars; then comes a period (decimal point) and the number of cents.

Three dollars and fifty cents is written	$3.50
Eighteen dollars and sixty-seven cents	$18.67
Twenty-four dollars	$24.00
Six dollars and eight cents	$6.08
Twenty-five cents	$.25
Three cents	$.03

Twenty-five cents may also be written 25¢; three cents may be written 3¢.

The abbreviations *ct.* and *cts.* are sometimes used; thus, 1 ct., 9 cts.

137. Slate Exercises.

Add:

191.	192.	193.	194.	195.
$13.57	$20.68	$3.69	$.48	$.17
8.69	12.56	41.36	2.15	.28
.31 39	9.99	3.40	.67	3.49
2.15 33	.55	10.65	3.85	16.55
30.70 25	6.37	9.87	42.30	4.70
9.58 6	26.58	.63	6.85	23.69
.39	.25	.50	18.46	.58

NOTE. In adding long columns, the total of each column may be placed alongside, as in example 191. Writing "carrying" figures in other operations should not be allowed.

138. Find differences between:

196. $84.00 and $73.17.
197. $23.16 and $70.00.
198. $69.50 and $90.40.
199. $45.75 and $39.69.
200. $24.00 and $8.63.
201. $21.52 and $.76.
202. $63.24 and $5.48.
203. $2.79 and $27.90.
204. $.16 and $16.00.
205. $8.38 and $91.11.

139. Oral Problems.

1. There are 5 rows of trees, 9 trees in each row. How many trees are there in all?

2. How many ounces of candy are there in 8 boxes, each containing 4 ounces?

3. There are 50 pages in a book. Sarah has read all but 5 pages. How many pages has she read?

4. Mr. Smith is 40 years old; his wife is 5 years younger. How old is Mrs. Smith?

5. William is 8 years old; his brother Stephen is 16 years older. How old is Stephen?

6. A woman paid 48 cents for 4 pounds of cheese. How much did one pound cost?

7. There are 45 gallons of oil in a barrel. How many gallons will there be in it after 10 are sold?

8. A girl wrote 50 words. She spelled 5 incorrectly. How many did she spell correctly?

9. How much will a dozen five-cent oranges cost?

10. A train goes a mile in 2 minutes. How many miles will it go in 26 minutes?

140. Slate Problems.

1. There are 5 houses in a row, and each house has 16 windows. How many windows are there in all?

2. A man buys a cow for $90. How many $5 bills will he have to give to pay for the cow?

3. Harry has 18 five-cent pieces in his bank. How much money has he?

4. If a girl went to school 21 days each month for 4 months, how many days would she attend school?

5. 90 boys belong to a certain school; 15 are absent. How many are present?

6. At 2 for a cent, how much will 48 peaches cost?

7. Henry, Jane, and Thomas had 25 marbles each. How many marbles did the three children have?

8. A man divided 60 cherries equally among 4 boys. How many did each receive?

9. If we spell 15 minutes a day, how many minutes will we spell in a week of 5 days?

10. A woman bought a $5 shawl, and gave the store-keeper a $100 bill. How much change did she receive?

FRACTIONAL PARTS.

141. Preliminary Exercises.

What is one-half of 2? Of 4? Of 8? Of 18? Of 20? Of 24?

142. One-half is written $\frac{1}{2}$.

143. Slate Exercises.

1. $\frac{1}{2}$ of 36 = ?
2. $\frac{1}{2}$ of 72 = ?
3. $\frac{1}{2}$ of 50 = ?
4. $\frac{1}{2}$ of 100 = ?

5. If a dollar contains 100 cents, how many cents are there in one-fourth of a dollar?

144. One-fourth is written $\frac{1}{4}$. One-third, $\frac{1}{3}$. One-fifth, $\frac{1}{5}$.

6. What is $\frac{1}{4}$ of 80? Find $\frac{1}{4}$ of 60.

145. Oral Exercises.

What is $\frac{1}{3}$ of 3? Of 6? Of 12? Of 18? Of 21? Of 27? Of 30? Of 36?

Find $\frac{1}{4}$ of 4. Of 8. Of 16. Of 24. Of 28. Of 36. Of 40. Of 48.

What is $\frac{1}{5}$ of 10? $\frac{1}{6}$ of 18? $\frac{1}{3}$ of 33?

146. Slate Exercises.

Find $\frac{1}{2}$ of each of the following. Find $\frac{1}{3}$. Find $\frac{1}{4}$.

1. 96	6. 192	11. 348	16. 912
2. 84	7. 144	12. 624	17. 756
3. 72	8. 576	13. 360	18. 864
4. 48	9. 252	14. 432	19. 960
5. 60	10. 156	15. 276	20. 720

ROMAN NOTATION.

147. In the Roman Notation, letters are used.

I = 1 V = 5 X = 10

148. The numbers from 1 to 10 are written as follows:

1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X

Placing X in succession before each of the foregoing gives the numbers from 11 to 20.

149. Write in Roman Numerals:

11 12 13 14 15 16 17 18 19 20

150. Read the following:

XXI XXIII XXV XXVII XXIX
XXII XXIV XXVI XXVIII XXX

151. Write in Roman numerals:

31 32 33 34 35 36 37 38 39

L stands for 50 XL = 40

152. Read the following:

XLI XLIII XLV XLVII XLIX
XLII XLIV XLVI XLVIII

153. Write in Roman numerals:

51 52 53 54 55 56 57 58 59

60 = LX 70 = ? 80 = ?

154. Read:

LXI LXXIV LXXXIX LV XXXIX XXIV LIII LIX

100 = C 90 = XC

155. Read:

XCI	XCIX	XCII	XCIII	XCVI
XCIV	XCVIII	XCV	XCVII	

156. Write in Roman numerals:

25 48 63 52 74 98 37 29 14 89 34 47 99

157. Liquid Measure.

2 pints = 1 quart.
4 quarts = 1 gallon.

Pints are written pt. Quarts are written qt. Gallons are written gal.

The measures themselves should be brought into the class-room, and should be handled by the children. As many as possible of the pupils should verify the table by filling the gallon measure with water, using the quart, etc.

158. Oral Problems.

1. How many weeks are there in 35 days?

2. A man had 25 pounds of raisins. How many pounds had he after selling one-half pound?

3. A family uses a gallon of milk a day. How many quarts does the family use in 7 days?

4. When milk is 8 cents a quart, what is the price of a gallon?

5. When oil is 8 cents a gallon, how much does a quart cost?

6. A boy had 2 pies, which he cut into fourths. How many pieces did he make?

7. How many quarter-dollars are there in 5 dollars?

8. John's father gave him a half-pound box of candy, and his aunt gave him a quarter-pound. How much candy did he have then?

9. If 9 fire-crackers are sold for 1 cent, how many can a boy get for 5 cents?

10. A storekeeper receives 45 cents for 9 balls. What does he charge apiece for them?

11. Louis has 9 pigeons; Henry has four times as many. How many has Henry?

12. How many marbles will Mr. Smith have to buy, to give 11 to each of his 4 boys?

13. A mechanic earns $24 per week of 6 days. What wages does he receive for a day's work?

14. A farmer has 4 horses, 27 cows, and 10 pigs. How many animals does he own?

15. A girl spent 9 cents for ribbon. If she had 30 cents at first, how much money had she left?

159. Slate Problems.

1. A farmer paid 15 dollars for a sheep, and paid for a cow 20 dollars more than he paid for the sheep. How many dollars did he pay for both?

2. Mr. Jones raised 90 tons of hay. He sold 65 tons, and his horses ate 10 tons. How many tons had he left?

3. William sold 8 dozen eggs. How many eggs did he sell?

4. Ellen has 5 cents left after spending 50 cents for a doll and 20 cents for a work-box. How much money had she at first?

5. A grocer charged 16 cents for a half-pound of butter. What was the cost of a pound?

6. If it takes 4 horses to draw 1 cannon, how many horses will be needed to draw 24 cannons?

7. A street-car conductor collected 85 cents in one trip. How many people were in the car, if each paid 5 cents?

8. Find the cost of $7\frac{1}{2}$ pounds of currants at 10 cents a pound.

9. When tea is 80 cents a pound, how much will I have to pay for a half-pound and a quarter of a pound?

10. Sarah buys a reader for 25 cents, a slate for 12 cents, and a copy book for 10 cents. How much change does she get out of a half-dollar?

11. How many 7-dollar suits can be bought for 84 dollars?

12. Mrs. Brown buys a sideboard for $25, a table for $15, and 6 chairs at $2 each. How much money does she spend?

13. A farmer has in his orchard 3 rows of peach trees, 2 rows of cherry trees, and 4 rows of apple trees. How many trees has he in the orchard, if there are 11 trees in each row?

14. There are 24 boys in a class. How many boys are there in 3 classes?

15. I spent 68 cents for dry goods, and have 22 cents left. How much money had I at first?

16. There are 90 eggs in a box. How many will be left after 5 dozen are sold?

17. Our reader has 87 pages. We read 45 pages last month, and 30 pages so far this month. How many pages have we yet to read?

18. James has 10 marbles, Thomas has 5 more than James, Edward has 5 more than Thomas. How many marbles have the three boys?

19. A fruit-dealer has 8 dozen oranges. How many oranges will he have after he sells 3 dozen?

20. How many days are there in April, May, and June?

CHAPTER III.

MULTIPLICATION AND DIVISION. — OUNCE AND POUND. — TWO OPERATIONS. — HALVES, THIRDS, FOURTHS. — MULTIPLICATION BY A MIXED NUMBER.

MULTIPLICATION BY 6.

160. Oral Exercises.

What is the cost of 6 pounds of sugar at six cents a pound? Of 6 seven-cent dolls? Of 6 quarts of milk at eight cents a quart? Of 6 yards of muslin at nine cents a yard.

161. Learn the following tables:

2 times 1 are 2	3 times 1 are 3	4 times 1 are 4	5 times 1 are 5	6 times 1 are 6
2 " 2 " 4	3 " 2 " 6	4 " 2 " 8	5 " 2 "10	6 " 2 "12
2 " 3 " 6	3 " 3 " 9	4 " 3 "12	5 " 3 "15	6 " 3 "18
2 " 4 " 8	3 " 4 "12	4 " 4 "16	5 " 4 "20	6 " 4 "24
2 " 5 "10	3 " 5 "15	4 " 5 "20	5 " 5 "25	6 " 5 "30
2 " 6 "12	3 " 6 "18	4 " 6 "24	5 " 6 "30	6 " 6 "36
2 " 7 "14	3 " 7 "21	4 " 7 "28	5 " 7 "35	6 " 7 "42
2 " 8 "16	3 " 8 "24	4 " 8 "32	5 " 8 "40	6 " 8 "48
2 " 9 "18	3 " 9 "27	4 " 9 "36	5 " 9 "45	6 " 9 "54
2 " 10 "20	3 " 10 "30	4 " 10 "40	5 " 10 "50	6 " 10 "60
2 " 11 "22	3 " 11 "33	4 " 11 "44	5 " 11 "55	6 " 11 "66
2 " 12 "24	3 " 12 "36	4 " 12 "48	5 " 12 "60	6 " 12 "72

162. Sight Exercises.

Give answers:

3×5	11×3	5×12	11×5	9×4
5×6	6×9	11×2	4×4	3×7
4×5	11×6	10×6	3×9	3×6
7×6	5×5	6×11	6×4	10×5

8 × 5	6 × 6	7 × 3	9 × 2	6 × 8
4 × 6	4 × 7	2 × 11	8 × 6	4 × 10
5 × 11	2 × 12	8 × 3	4 × 9	6 × 5
12 × 5	3 × 8	10 × 3	5 × 10	10 × 2
9 × 3	4 × 3	5 × 8	9 × 5	12 × 6
7 × 4	4 × 8	4 × 12	6 × 10	7 × 5
2 × 8	9 × 6	5 × 7	12 × 4	3 × 3
12 × 3	5 × 9	10 × 4	6 × 7	2 × 9
4 × 11	11 × 4	6 × 12	12 × 2	8 × 4

163. Slate Exercises.

Multiply by 6:

1. 1,643	**9.** 280	**17.** 728	**25.** 1,632	**33.** 1,095
2. 264	**10.** 344	**18.** 1,628	**26.** 1,570	**34.** 1,665
3. 807	**11.** 1,123	**19.** 764	**27.** 998	**35.** 1,049
4. 1,360	**12.** 676	**20.** 1,448	**28.** 1,168	**36.** 990
5. 1,605	**13.** 1,308	**21.** 1,566	**29.** 1,268	**37.** 1,630
6. 199	**14.** 444	**22.** 1,056	**30.** 1,232	**38.** 1,504
7. 358	**15.** 1,660	**23.** 1,358	**31.** 1,612	**39.** 1,320
8. 647	**16.** 555	**24.** 1,374	**32.** 1,536	**40.** 1,409

164. Sight Exercises.

Give quotients:

5)45	6)48	7)14	8)24	9)45	10)60
11)22	12)36	11)44	10)30	9)18	8)16
7)42	6)54	5)55	4)32	3)36	2)18
3)33	4)36	5)40	6)72	7)28	8)40
9)36	10)40	11)33	12)48	11)55	10)20
9)9	8)48	7)35	6)66	5)60	4)44
3)21	2)24	3)27	4)48	5)40	6)36
7)21	8)32	9)54	10)50	11)11	12)24

165. Worcester Public Schools. — Examination Questions.

1. How many days are there in 3 weeks?

2. How many 2-cent stamps can I buy for 18 cents?

3. $18 + ? = 24$ $\quad 27 + ? = 18$ $\quad 14 + ? = 22$
$43 - ? = 35$ $\quad 31 - ? = 24$

4. $\frac{1}{2}$ of $18 = ?$ $\quad \frac{1}{3}$ of $24 = ?$ $\quad \frac{1}{6}$ of $30 = ?$
$\frac{1}{4}$ of $40 = ?$ $\quad \frac{1}{8}$ of $48 = ?$

5. If $\frac{1}{4}$ of a yard of ribbon costs 8 cents, what is the price of a yard?

6. At 3 cents a pint, how much will 5 quarts of milk cost?

7. How many thirds are there in 1 apple? In 3 apples?

8.

4	9	4	7	8
8	8	8	7	9
6	6	7	6	7
7	8	6	5	4
5	3	10	4	5

9. A boy earned a dime every day for 5 days. How much money did he earn? He spent 30 cents for a cap, and a dime for a blank book. How much money had he left?

10.

56	54	73	91	47
61	31	24	76	61
82	70	91	52	20

11. Four boys bought a pound of candy. What part of the pound will each boy have, if it be divided equally among them?

12. Count by 3's to 48. Count by 2's to 50.

13. $(28 \div 4) + (6 \times 6) - (17 - 8) = ?$

14. Harold has 6 marbles, and Henry has seven times as many. How many has Henry?

15. $58 - 6 - 4 - 3 - 2 - 9 - 7 - 8 - 1 - 5 = ?$
$3 + 4 + 6 + 8 + 10 + 9 + 7 + 5 + 3 + 1 = ?$

DIVISION BY 6.

166. Slate Exercises.

Divide by 6:

1. 1,728	11. 3,006	21. 5,016	31. 7,002	41. 9,240
2. 1,056	12. 3,966	22. 5,238	32. 7,338	42. 9,360
3. 1,314	13. 3,348	23. 5,910	33. 7,512	43. 9,426
4. 1,566	14. 3,582	24. 5,652	34. 7,734	44. 9,540
5. 1,926	15. 3,726	25. 5,814	35. 7,956	45. 9,636
6. 2,484	16. 4,284	26. 6,810	36. 8,436	46. 8,904
7. 2,790	17. 4,536	27. 6,936	37. 8,574	47. 7,500
8. 2,160	18. 4,068	28. 6,426	38. 8,664	48. 5,040
9. 2,574	19. 4,644	29. 6,234	39. 8,790	49. 6,336
10. 2,664	20. 4,410	30. 6,048	40. 8,832	50. 4,824

167. Sight Exercises.

Give missing numbers:

$9 \times ? = 54$	$? \times 5 = 40$	$16 \div ? = 8$
$? - 6 = 19$	$? + 7 = 25$	$? \div 3 = 9$
$24 - ? = 15$	$12 \times 3 = ?$	$32 \div 4 = ?$

168. Original Problems.

Make problems containing the following numbers:

$20 + 8 + 7 + 5$	$19 - 4$	12×5
$28 \div 4$	5×6	$20 \div 2$

169. Review. Slate Exercises.

Add:

1. 1,792; 816; 54; 937; 208; 4,007; 19.
2. 357; 20; 9; 64; 583; 6,086; 444; 37.

3. 2,095; 5; 678; 23; 418; 96; 177; 3,456.
4. 1,876; 783; 275; 954; 783; 666; 2,854; 1,009.
5. 8; 75; 466; 4,308; 275; 54; 9; 83; 507.

170. Find differences between:

6. 684 and 1,079.
7. 9,101 and 2,345.
8. 7,311 and 5,198.
9. 1,876 and 938.
10. 4,000 and 2,500.
11. 9,000 and 8,970.
12. 6,473 and 5,876.
13. 4,321 and 5,000.
14. 2,763 and 4,087.
15. 9,002 and 4,932.
16. 9 and 9,000.
17. 7,800 and 6,969.
18. 3,000 and 13.
19. 2,470 and 2,560.
20. 8,000 and 7,999.

171. Multiply by 2:

21. 4,978 22. 3,708 23. 4,837 24. 3,916 25. 2,785

By 3:

26. 1,978 27. 3,284 28. 3,306 29. 2,765 30. 1,899

By 4:

31. 2,467 32. 2,315 33. 2,475 34. 1,899 35. 1,978

By 5:

36. 1,890 37. 1,257 38. 1,683 39. 1,594 40. 1,738

By 6:

41. 1,659 42. 1,538 43. 1,476 44. 1,375 45. 1,248

By 7:

46. 1,426 47. 1,364 48. 1,251 49. 1,403 50. 1,265

By 8:

51. 1,234 52. 1,065 53. 1,143 54. 1,203 55. 1,152

By 9:

56. 1,032 57. 1,052 58. 1,063 59. 1,105 60. 1,036

By 10:

61. 456 **62.** 354 **63.** 260 **64.** 364 **65.** 625

By 11:

66. 612 **67.** 505 **68.** 624 **69.** 530 **70.** 456

By 12:

71. 232 **72.** 304 **73.** 215 **74.** 521 **75.** 605

172. Divide by 2:

76. 9,876 **77.** 8,954 **78.** 7,976 **79.** 6,958 **80.** 5,974

By 3:

81. 8,988 **82.** 7,698 **83.** 9,864 **84.** 8,727 **85.** 7,908

By 4:

86. 9,788 **87.** 9,964 **88.** 9,856 **89.** 8,992 **90.** 8,708

By 5:

91. 7,895 **92.** 8,705 **93.** 9,610 **94.** 6,835 **95.** 7,990

By 6:

96. 9,840 **97.** 8,922 **98.** 9,900 **99.** 8,814 **100.** 7,830

By 7:

101. 8,022 **102.** 8,652 **103.** 9,555 **104.** 9,912 **105.** 7,392

By 8:

106. 9,968 **107.** 8,504 **108.** 9,248 **109.** 8,520 **110.** 8,480

By 9:

111. 9,504 **112.** 9,954 **113.** 9,144 **114.** 9,558 **115.** 9,576

By 10:

116. 6,460 **117.** 5,230 **118.** 4,120 **119.** 3,340 **120.** 2,530

By 11:

121. 4,422 **122.** 5,533 **123.** 6,094 **124.** 3,443 **125.** 2,365

By 12:

126. 1,212 **127.** 2,436 **128.** 1,344 **129.** 2,556 **130.** 1,500

173. Oral Problems.

1. Spent 75 cents for a book, and 10 cents for a slate. How much was paid for both?

2. If a girl pays one cent for 5 jackstones, how many cents would she have to pay for 25 jackstones?

3. A pound of butter costs 24 cents. How much will $\frac{1}{4}$ pound cost?

4. If $\frac{1}{2}$ pound of sugar costs 3 cents, what is the price of a pound?

5. At $5 per ton, how many dollars will I have to pay for 6 tons of coal?

6. How many feet have 12 cows?

7. If 24 children, at a party, eat $\frac{1}{2}$ pint of ice-cream each, how many pints will they all eat?

8. How many oranges are there in a box containing 5 dozen?

9. A woman pays $18 for material for a dress, and $6 for making it. How much does the dress cost?

10. I pay 10 cents for $\frac{1}{4}$ pound of candy. How much would I have to pay for $\frac{1}{2}$ pound?

174. Slate Problems.

1. Find the cost of 6 coats at $15 each.

2. If 6 marbles are sold for one cent, how much will a boy have to pay for 84 marbles?

3. What is the price of a half-yard of lace worth 90 cents a yard?

4. At 6 cents a pound, how many pounds of sugar can you buy for 96 cents?

5. What will be the cost of 3 base-balls at 25 cents each?

6. A storekeeper sells marbles at 13 for a cent. How many marbles can be bought for 5 cents?

7. At 3 for a cent, how many cents would I have to pay for 99 slate pencils?

8. If there are 24 hours in a day, how many hours are there in 3 days?

9. John has 136 postage stamps, and William has 4. How many have they together?

10. By selling a ball for 75 cents, I lost 5 cents. What did it cost me?

11. What will be the cost of 6 cans of corn at 13 cents a can?

12. How many pounds of 4-cent flour can be bought for 64 cents?

13. Harry learns to spell 14 words a day. How many does he learn in 5 days?

14. How many quarts are there in 18 gallons?

15. How many quarts are there in 64 pints?

16. A girl goes to school 5 hours a day. How many minutes does she attend school if there are 60 minutes in an hour?

17. There are 4 classes in a school, and 24 pupils in each class. How many pupils are there?

18. What will be the cost of 2 dolls at 49 cents each?

19. Paid 48 cents for 3 yards of cambric. What was the price of 1 yard?

20. A boy sold some newspapers for 50 cents; he made 25 cents profit. What did the papers cost him?

21. A Noah's ark contains 15 animals. How many animals in 6 Noah's arks?

22. A train went 96 miles in 3 hours. How many miles did it go in one hour?

23. Fifty pupils belong to a certain class; 13 are absent. How many are present?

24. On Friday there were 68 pupils present in school, and 12 absent. How many pupils belong to the school?

25. Eighty children attend a strawberry festival; each one eats one-half pint of ice-cream. How many pints are eaten?

26. How many quarts are there in 90 pints?

27. What would be the cost of 6 velocipedes at $13 each?

28. A circus owner paid $92 for 4 monkeys. How much apiece did they cost?

29. The fare on a certain railroad is 3 cents a mile. How many miles can I ride for 96 cents?

30. A street-car conductor receives 5 cents fare from each passenger. How many passengers has he, if he receives 75 cents for fares?

QUOTIENTS AND REMAINDERS.

175. Divide 13 by 2.

The dividend 13 contains the divisor 2, 6 times with 1 remainder. The remainder is written over the divisor. The answer is read six and one-half.

$$2\overline{)13}\quad 6\tfrac{1}{2}$$

Divide 27 by 4.

The quotient is 6, and the remainder is 3. The answer is $6\frac{3}{4}$, read six and three-fourths.

In like manner $42 \div 5 = 8\frac{2}{5}$; $67 \div 6 = 11\frac{1}{6}$.

176. Slate Exercises.

Find answers:

1.	$87 \div 2$	**11.**	$370 \div 3$	**21.**	$1{,}200 \div 9$	**31.**	$6{,}833 \div 5$
2.	$195 \div 4$	**12.**	$289 \div 6$	**22.**	$1{,}001 \div 8$	**32.**	$9{,}545 \div 6$
3.	$415 \div 6$	**13.**	$359 \div 7$	**23.**	$1{,}416 \div 7$	**33.**	$4{,}238 \div 7$
4.	$230 \div 3$	**14.**	$421 \div 8$	**24.**	$2{,}593 \div 6$	**34.**	$4{,}005 \div 8$
5.	$954 \div 5$	**15.**	$370 \div 9$	**25.**	$4{,}976 \div 5$	**35.**	$4{,}555 \div 9$
6.	$1{,}607 \div 2$	**16.**	$453 \div 10$	**26.**	$7{,}577 \div 4$	**36.**	$2{,}349 \div 10$
7.	$295 \div 3$	**17.**	$567 \div 11$	**27.**	$6{,}872 \div 3$	**37.**	$3{,}367 \div 11$
8.	$163 \div 4$	**18.**	$607 \div 12$	**28.**	$9{,}503 \div 2$	**38.**	$4{,}877 \div 12$
9.	$809 \div 6$	**19.**	$1{,}354 \div 11$	**29.**	$8{,}761 \div 3$	**39.**	$5{,}611 \div 11$
10.	$756 \div 5$	**20.**	$1{,}247 \div 10$	**30.**	$7{,}699 \div 4$	**40.**	$3{,}803 \div 9$

MULTIPLICATION BY A MIXED NUMBER.

177. Sight Exercises.

Give answers:

$\frac{1}{4}$ of 24	$\frac{2}{4}$ of 24	$\frac{1}{2}$ of 24	$\frac{3}{4}$ of 24
$\frac{4}{4}$ of 24	$\frac{2}{2}$ of 24	$\frac{1}{3}$ of 24	$\frac{2}{3}$ of 24
$\frac{1}{6}$ of 24	$\frac{2}{6}$ of 24	$\frac{3}{6}$ of 24	$\frac{4}{6}$ of 24
$\frac{5}{6}$ of 24	$\frac{6}{6}$ of 24	$24 \times 1\frac{1}{2}$	$24 \times 1\frac{1}{3}$
$24 \times 1\frac{1}{4}$	$24 \times 1\frac{1}{6}$	$12 \times 1\frac{1}{3}$	$12 \times 1\frac{1}{4}$
$12 \times 2\frac{1}{2}$	$12 \times 2\frac{1}{3}$	$12 \times 2\frac{1}{4}$	$12 \times 2\frac{1}{6}$

178. Slate Exercises.

Find answers:

1. $26 \times 1\frac{1}{2}$	11. $\frac{1}{6}$ of 96	21. $120 \times 9\frac{1}{2}$
2. $39 \times 1\frac{1}{3}$	12. $\frac{5}{6}$ of 96	22. $126 \times 1\frac{1}{2}$
3. $60 \times 1\frac{1}{4}$	13. $120 \times 1\frac{1}{5}$	23. $126 \times 1\frac{1}{3}$
4. $\frac{2}{3}$ of 39	14. $120 \times 2\frac{1}{4}$	24. $126 \times 1\frac{1}{6}$
5. $\frac{3}{4}$ of 56	15. $120 \times 3\frac{1}{3}$	25. $124 \times 2\frac{1}{4}$
6. $\frac{4}{5}$ of 75	16. $120 \times 4\frac{1}{2}$	26. $240 \times 1\frac{1}{3}$
7. $48 \times 1\frac{1}{3}$	17. $120 \times 5\frac{1}{6}$	27. $760 \times 1\frac{1}{5}$
8. $56 \times 1\frac{1}{4}$	18. $120 \times 6\frac{1}{5}$	28. $840 \times 3\frac{1}{6}$
9. $75 \times 1\frac{1}{5}$	19. $120 \times 7\frac{1}{4}$	29. $960 \times 4\frac{1}{2}$
10. $\frac{2}{5}$ of 120	20. $120 \times 8\frac{1}{3}$	30. $380 \times 4\frac{1}{2}$

179. Oral Problems.

1. I bought 6 pounds of 4-cent sugar and gave the storekeeper 25 cents. How much change should I receive?

2. How much must be paid for a 10-cent doll, and $\frac{1}{2}$ yard of damask at 40 cents a yard?

3. If two oranges cost 6 cents, how many cents will 5 cost?

4. What will I pay for a gallon of milk at the rate of 3 cents a pint?

5. Find the cost of three-fourths of a yard of 8-cent muslin.

6. A boy had 25 cents. He spent 10 cents for a base-ball. How many 5-cent bats can he buy with the rest of his money?

7. What will $3\frac{1}{2}$ pounds of 6-cent sugar cost?

8. Sarah buys two 12-cent goblets and a yard of 9-cent ribbon. How much money does she pay for all?

9. If there are 16 ounces in a pound, how many ounces are there in three-fourths of a pound?

10. When butter is 24 cents a pound, what part of a pound can be bought for 6 cents?

180. Slate Problems.

1. Bought 4 yards of cambric at 13 cents a yard. How much change do I receive if I give the clerk 75 cents?

2. What would be the cost of $\frac{1}{2}$ pound of 70-cent tea and 25 cents' worth of eggs?

3. If 2 sheep cost $26, how many dollars would I have to pay for 5 sheep?

4. What would be the price of a gallon of ice-cream at the rate of 12 cents a pint?

5. Find the cost of $\frac{3}{4}$ of a pound of 60-cent tea.

6. A man has $90. He buys a cow for $45. How many sheep at $5 each can he buy for the remainder of his money?

7. What will $3\frac{1}{2}$ yards of lace cost at 24 cents a yard?

8. Mary buys 6 goblets at 13 cents each and a yard of silesia for 15 cents. How much money does she pay for all?

181. There are 16 ounces in a pound. Write ounce, oz.; pound, lb.

9. How many ounces are there in $2\frac{1}{4}$ pounds?

NOTATION AND NUMERATION.

182. Write one thousand in figures. Nine thousand. Ten thousand. Eleven thousand. Twelve thousand. Thirteen thousand. Twenty thousand. Thirty thousand. Forty-one thousand. Fifty-two thousand. Sixty-three thousand. Seventy-four thousand. Eighty-five thousand. Ninety-six thousand.

183. Read the following:

97,000	56,789	60,706	11,010	10,100
50,800	90,001	23,456	33,333	11,100
10,000	84,000	67,890	70,007	10,111
11,000	40,900	89,998	34,567	44,444
11,101	10,001	73,000	78,900	80,080
11,111	10,011	30,600	70,503	45,678
56,789	11,110	10,010	65,000	89,000
12,345	22,222	10,101	20,100	67,008

184. Write:

Forty-seven thousand eight hundred sixteen.
Eleven thousand eleven.
Four thousand four.
Ninety thousand nine.
Sixty-two thousand sixty-two,
Forty-five thousand eight hundred ten.
Ninety-nine thousand nine hundred ninety-nine.
Four hundred seven.
Eighty-three thousand six hundred eighty.
Fifty thousand five hundred five.

185. Read the following:

4,263	24,734	6,412	32,487	61,005
77,481	4,084	36,073	8,000	26,789
91,733	1,875	87,091	707	15,897
49,137	18,765	50,008	6,040	5,678
7,009	79	19,109	89,364	3,709
54,020	95,687	45,606	90,500	40,002
2,244	45,000	80,020	8,964	71,435
20,000	25,045	63,817	72,000	5,031
30,087	62,990	17,717	25,020	30,200
78,003	88,502	15,480	17,901	40,893
CLXXVI	XCIX	XLVIII	XXXIV	LXXXVII

186. Add across. Add down.

1 +	3 +	7 +	8 +	4 +	2 = ?
20 +	40 +	70 +	90 +	30 +	50 = ?
300 +	500 +	800 +	200 +	600 +	400 = ?
4,000 +	6,000 +	5,000 +	7,000 +	8,000 +	1,000 = ?
10,000 +	10,000 +	10,000 +	10,000 +	10,000 +	10,000 = ?
? +	? +	? +	? +	? +	? = ?

Add down. Subtract across.

9 −	6 = ?	7 −	4 = ?
70 −	30 = ?	80 −	20 = ?
800 −	200 = ?	900 −	300 = ?
9,000 −	1,000 = ?	6,000 −	2,000 = ?
40,000 −	10,000 = ?	50,000 −	40,000 = ?
? −	? = ?	? −	? = ?

MULTIPLICATION BY 7.

187. Make table of 7's. Learn it.

188. Sight Exercises.

Give products:

3×7	2×7	4×7	6×7
1×7	8×7	10×7	5×7
11×7	9×7	12×7	7×7

189. Slate Exercises.

Multiply by 7:

1. 14	**11.** 26	**21.** 95	**31.** 1,016	**41.** 11,076
2. 15	**12.** 33	**22.** 121	**32.** 2,320	**42.** 12,085
3. 17	**13.** 35	**23.** 608	**33.** 3,006	**43.** 13,960
4. 22	**14.** 42	**24.** 315	**34.** 4,027	**44.** 14,031
5. 24	**15.** 45	**25.** 422	**35.** 5,309	**45.** 10,628
6. 103	**16.** 53	**26.** 706	**36.** 6,028	**46.** 12,598
7. 205	**17.** 54	**27.** 625	**37.** 7,123	**47.** 11,675
8. 307	**18.** 66	**28.** 813	**38.** 8,650	**48.** 10,989
9. 409	**19.** 70	**29.** 276	**39.** 9,321	**49.** 10,999
10. 510	**20.** 82	**30.** 365	**40.** 9,876	**50.** 11,999

DIVISION BY 7.

190. Slate Exercises.

Divide by 7:

51. 91	**56.** 714	**61.** 189	**66.** 378	**71.** 651
52. 112	**57.** 1,428	**62.** 238	**67.** 392	**72.** 784
53. 147	**58.** 2,142	**63.** 252	**68.** 469	**73.** 3,556
54. 161	**59.** 2,849	**64.** 301	**69.** 560	**74.** 2,212
55. 175	**60.** 3,563	**65.** 322	**70.** 588	**75.** 2,975

76. 4,249	**81.** 7,098	**86.** 42,140	**91.** 79,569	**96.** 59,059
77. 4,382	**82.** 16,247	**87.** 50,491	**92.** 87,556	**97.** 62,062
78. 5,698	**83.** 21,049	**88.** 59,920	**93.** 95,263	**98.** 75,075
79. 1,960	**84.** 28,196	**89.** 63,861	**94.** 96,439	**99.** 88,088
80. 2,562	**85.** 37,156	**90.** 72,982	**95.** 48,048	**100.** 99,099

191. Review.

Find answers:

101. $7\overline{)849}$	**106.** $\frac{849}{7}$	**111.** $600 \div 7$	**116.** $\frac{1}{7}$ of 273
102. $6\overline{)849}$	**107.** $\frac{849}{6}$	**112.** $509 \div 6$	**117.** $\frac{1}{6}$ of 432
103. $5\overline{)849}$	**108.** $\frac{849}{5}$	**113.** $609 \div 5$	**118.** $\frac{1}{5}$ of 865
104. $4\overline{)849}$	**109.** $\frac{849}{4}$	**114.** $607 \div 4$	**119.** $\frac{1}{4}$ of 728
105. $3\overline{)849}$	**110.** $\frac{849}{2}$	**115.** $307 \div 3$	**120.** $\frac{1}{3}$ of 861

192. Multiply by 8:

121. 2,460	**122.** 3,571	**123.** 6,052	**124.** 3,565

By 9:

125. 1,507	**126.** 2,306	**127.** 3,754	**128.** 4,625

By 10:

129. 3,571	**130.** 1,346	**131.** 2,456	**132.** 2,301

By 11:

133. 1,304	**134.** 2,460	**135.** 3,507	**136.** 4,321

By 12:

137. 2,030	**138.** 3,151	**139.** 4,263	**140.** 5,174

193. Divide by 8:

141. 24,327	**142.** 50,005	**143.** 30,063	**144.** 28,569

By 9:

145. 32,140	**146.** 12,119	**147.** 22,102	**148.** 20,710

By 10:

149. 24,327	**150.** 30,063	**151.** 26,579	**152.** 37,543

By 11:

153. 28,347	**154.** 25,345	**155.** 26,800	**156.** 38,577

By 12:

157. 24,361	**158.** 48,731	**159.** 37,812	**160.** 51,157

194. Add:

161. 4,263	**162.** 24,734	**163.** 685	**164.** 9
17,481	4,389	7,412	88
1,733	1,875	36,073	777
9,137	679	8,791	6,666
7,009	84	5,008	55,555
34,020	376	19,109	4,444
2,244	5,007	5,678	333
987	34,060	395	22
63	9,988	84	1

165. $610.05	**166.** $24.60	**167.** $487.31	**168.** $164.75
67.89	150.78	78.12	23.46
8.97	35.71	51.57	35.07
6.78	413.04	4.36	121.19
37.09	31.51	.67	300.63
14.35	42.63	25.34	65.79
50.31	5.74	106.83	74.35
2.00	85.69	57.50	8.04
.93	.77	3.87	10.60

169. 347 + 8,865 + 24,795 + 9,876 + 4,050 + 16,984 + 6,395 + 10,034 + 1,776 + 235.

170. 13,275 + 9,083 + 22,659 + 3,876 + 248 + 1,207 + 14,307 + 2,369.

195. Find differences between:

171. 90,876 and 89,967.
172. 10,000 and 9,090.
173. 84,378 and 90,000.
174. 50,101 and 51,010.
175. 36,599 and 36,700.
176. 43,285 and 37,967.
177. 54,283 and 25,179.
178. 38,000 and 43,584.
179. 17,246 and 83,111.
180. 60,301 and 54,287.
181. $900.00 and 30 cents.
182. $742.65 and $8.37.
183. $9.16 and $916.00.
184. $3.40 and $543.21.
185. $1,234.50 and $3.75.
186. $98.75 and $1,000.00.

196. Oral Problems.

1. What will be the cost of a 10-cent piece of soap, and 7 pounds of cheese at 11 cents a pound?

2. Forty-eight quarts are how many gallons?

3. How much will be paid for 12 yards of gingham at 7 cents a yard?

4. If 2 spools of thread cost 10 cents, what will 10 spools cost?

5. What must I pay for $1\frac{1}{2}$ yards of 24-cent ribbon?

6. There are 12 months in a year. How many months are there in $3\frac{1}{4}$ years?

7. How many ounces are there in 1 pound 9 ounces?

8. At 48 cents a gallon, what will be the cost of a pint of molasses?

9. A farmer's wife had 60 eggs. How many dozen did she have?

10. What is the cost of $\frac{3}{4}$ of a yard of serge at 40 cents a yard?

197. Slate Problems.

1. What will 7 bushels of wheat weigh, if there are 60 pounds in 1 bushel?

2. Find the weight of 8 bushels of corn, if a bushel of corn weighs 56 pounds.

3. $750 are paid for 5 horses. How much does 1 horse cost?

4. A man buys a box containing 30 dozen oranges. How many oranges are there in the box?

5. A box contains 60 lemons. If one-fourth of them are bad, how many good ones are there in the box?

6. What will be the cost of $5\frac{1}{2}$ yards of gingham at 18 cents a yard?

7. 280 pupils attend a certain school. If one-seventh of them are absent, how many pupils are present?

8. How many gallons are there in 320 pints?

9. How many ounces are there in 3 pounds 4 ounces?

198. Sight Exercises.

Give products:

8×3	7×4	5×9	6×7	8×5
2×8	3×9	4×7	7×9	12×6
5×7	12×4	10×5	8×6	9×7
11×6	5×5	7×8	12×7	5×12
8×7	6×8	9×6	5×8	4×9
6×9	7×12	2×8	6×10	7×8
12×5	4×8	7×7	12×3	11×7

199. Give quotients:

$24 \div 3$	$54 \div 6$	$60 \div 5$	$24 \div 8$	$27 \div 9$
$16 \div 8$	$48 \div 4$	$25 \div 5$	$48 \div 8$	$84 \div 7$
$35 \div 7$	$32 \div 8$	$45 \div 9$	$28 \div 4$	$50 \div 5$

$66 \div 6$	$56 \div 8$	$54 \div 6$	$16 \div 8$	$49 \div 7$
$56 \div 7$	$42 \div 7$	$63 \div 9$	$48 \div 6$	$84 \div 7$
$40 \div 8$	$60 \div 10$	$36 \div 3$	$40 \div 5$	$72 \div 6$
$63 \div 7$	$60 \div 12$	$36 \div 9$	$56 \div 8$	$77 \div 7$

MULTIPLICATION BY 8.

200. Make table of 8's. Learn it.

201. Slate Exercises.

Multiply by 8:

1. 13	**11.** 33	**21.** 38	**31.** 407	**41.** 5,167
2. 14	**12.** 35	**22.** 47	**32.** 509	**42.** 6,234
3. 15	**13.** 41	**23.** 56	**33.** 613	**43.** 7,568
4. 20	**14.** 43	**24.** 65	**34.** 717	**44.** 8,290
5. 21	**15.** 52	**25.** 74	**35.** 821	**45.** 9,067
6. 22	**16.** 61	**26.** 83	**36.** 935	**46.** 9,408
7. 23	**17.** 73	**27.** 92	**37.** 1,050	**47.** 10,234
8. 24	**18.** 80	**28.** 101	**38.** 2,135	**48.** 12,046
9. 25	**19.** 91	**29.** 203	**39.** 3,456	**49.** 11,507
10. 31	**20.** 29	**30.** 305	**40.** 4,083	**50.** 10,345

DIVISION BY 8.

202. Sight Exercises.

Give answers:

$\frac{24}{8}$	$\frac{35}{7}$	$\frac{63}{9}$	$\frac{72}{6}$	$\frac{77}{7}$
$40 \div 8$	$63 \div 7$	$81 \div 9$	$72 \div 8$	$64 \div 8$
$6\overline{)44}$	$9\overline{)27}$	$8\overline{)56}$	$7\overline{)84}$	$5\overline{)60}$
$9\overline{)45}$	$2\overline{)25}$	$3\overline{)32}$	$4\overline{)45}$	$5\overline{)44}$
$6\overline{)37}$	$7\overline{)53}$	$8\overline{)59}$	$9\overline{)50}$	$9\overline{)70}$

203. Slate Exercises.

Divide by 8:

1. 104	7. 184	13. 376	19. 808	25. 5,736
2. 112	8. 192	14. 448	20. 1,624	26. 6,568
3. 120	9. 200	15. 520	21. 2,440	27. 7,480
4. 160	10. 248	16. 592	22. 3,256	28. 8,400
5. 168	11. 232	17. 664	23. 4,072	29. 17,080
6. 176	12. 304	18. 736	24. 4,904	30. 27,648

204. Oral Problems.

1. If 2 oranges cost 6 cents, what will I have to pay for 8 oranges?

2. What will 8 pairs of shoes cost at $4 per pair?

3. A farmer had 39 sheep in one flock, 8 in another, and 10 in another. How many sheep had he in all?

4. Ellen gathered 11 quarts of berries, Mary gathered 2 quarts less than Ellen. How many did both gather?

5. Frank's aunt gave him 50 cents. He gave 10 cents for a slate, and spent the rest for lead-pencils at 5 cents each. How many pencils did he buy?

6. What will be the fare for 11 boys at 3 cents each?

7. There are 46 maple trees in a park, 10 pine trees, and 9 oaks. How many trees are there in the park?

8. A man bought a wagon for $35. He spent $10 fixing it. What would he gain by selling it for $50?

9. A grocer bought 36 eggs at $\frac{3}{4}$ of a cent apiece. How many cents did the eggs cost him?

10. Jane had 48 cents; her mother gave her 10 cents, and she spent 50 cents. How much money had she left?

11. How many dollars will I have to pay for 2 barrels of flour, at $\$5\frac{1}{2}$ a barrel?

12. A dealer bought coal for $\$4.50$ per ton, and sold it for $\$5$. How much did he gain?

13. There are two stables with 14 horses in each. How many horses are there in both?

14. If $\frac{1}{2}$ a pound of sugar costs 3 cents, what will be the cost of 5 pounds?

15. If 96 marbles are divided equally among 8 boys, how many will each receive?

205. Slate Problems.

1. If 2 pounds of raisins cost 26 cents, what will be the cost of 7 pounds?

2. What will 8 overcoats cost at $\$15$ each?

3. A drover bought 39 oxen from one man, 48 from a second, and 59 from a third. How many oxen did he buy?

4. Mr. Lane sold 45 bushels of apples; his neighbor sold 10 bushels less. How many bushels did both sell?

5. A boy went to the store with 90 cents. He bought a pound of lard for 22 cents, and spent the rest for flour at 4 cents a pound. How many pounds of flour did he buy?

6. What will be the fare for 34 boys at 3 cents each?

7. There are 24 maple trees in a park, and 26 more chestnut trees than maples. How many are there of both kinds?

8. A man bought an ox for $\$37$. After spending $\$23$ in feeding it, he sold the ox for $\$78$. What was his profit?

9. Find the cost of $4\frac{1}{8}$ pounds of coffee at 24 cents a pound.

10. A merchant had $48\frac{1}{2}$ yards of calico. He sold $35\frac{1}{2}$ yards, and bought 52 yards. How many yards had he then?

11. What will 2 yards of ribbon cost at $16\frac{1}{2}$ cents a yard?

12. How much profit is made on an article that costs $3.75 and is sold for $5?

13. How many pints are there in 42 quarts 1 pint?

14. A store-keeper received $1.40 for 4 pounds of butter. What was the price per pound?

15. How many ounces are there in $5\frac{1}{4}$ pounds?

16. How many ounces are there in 5 pounds 4 ounces?

17. When tea sells for 5 cents an ounce, how much does one-fourth of a pound cost?

18. A dealer bought 20 quarts of milk at 16 cents a gallon. How much did he pay for it?

19. What will 3 dozen lemons cost at 2 cents each?

20. If 8 pounds of sugar cost 48 cents, what will be the price of a half pound?

21. A farmer has 92 acres in 4 fields of equal size. How many acres are there in 3 fields?

22. A store-keeper had 24 hammers. He sold one-fourth of them at 15 cents each. What did he receive for them?

23. Mr. Day had 84 sheep. He kept 70 of them, and sold the remainder at $7 apiece. How much did he get for the ones he sold?

24. How many quarts in a barrel of oil that holds 45 gallons?

25. There are 24 hours in a day. How many hours are there in a week?

26. A farmer has 16 cows in one stable and three times as many in another stable. How many cows has he in both stables?

27. How many boxes holding 8 ounces each will 5 pounds of candy fill?

MULTIPLICATION BY 9.

206. Make table of 9's. Learn it.

207. **Slate Exercises.**

Multiply by 9:

1. 13	11. 34	21. 39	31. 832	41. 6,018
2. 14	12. 36	22. 46	32. 946	42. 6,342
3. 15	13. 41	23. 55	33. 1,051	43. 7,685
4. 20	14. 43	24. 64	34. 2,143	44. 8,370
5. 21	15. 54	25. 73	35. 3,465	45. 9,067
6. 22	16. 62	26. 81	36. 4,093	46. 10,345
7. 23	17. 75	27. 92	37. 4,216	47. 11,067
8. 24	18. 82	28. 102	38. 4,436	48. 10,489
9. 25	19. 93	29. 204	39. 5,025	49. 10,523
10. 32	20. 28	30. 728	40. 5,173	50. 10,658

DIVISION BY 9.

208. **Slate Exercises.**

Divide by 9:

51. 117	59. 225	67. 657	75. 666	83. 5,517
52. 126	60. 279	68. 720	76. 747	84. 6,453
53. 135	61. 297	69. 819	77. 828	85. 7,389
54. 180	62. 315	70. 261	78. 909	86. 8,415
55. 189	63. 369	71. 387	79. 1,827	87. 9,450
56. 198	64. 387	72. 423	80. 2,745	88. 19,125
57. 207	65. 414	73. 504	81. 3,663	89. 45,819
58. 216	66. 549	74. 585	82. 4,581	90. 65,214

209. Divide by 8. By 9.

91. 140	94. 482	97. 804	100. 627
92. 217	95. 675	98. 902	101. 914
93. 361	96. 777	99. 405	102. 375

210. Oral Problems.

1. William has 10 marbles; Edward has 5 more than William. How many marbles have both boys?

2. James spent 50 cents for a ball, and 30 cents for bats. How much did he spend?

3. If candy is 40 cents a pound, what will $\frac{3}{4}$ pound cost?

4. If $\frac{1}{4}$ pound tea costs 20 cents, how much will I have to pay for $\frac{1}{2}$ pound?

5. If 3 peaches cost 9 cents, how many peaches can I buy for 15 cents?

6. Three-quarters of a pound of butter costs 24 cents; how many cents does one-quarter of a pound cost?

7. A boy has in his bank a quarter, a dime, a half-dime, a 3-cent piece, a 2-cent piece, and a cent. How much money has he?

8. What part of a pie will be left after three children have each received one-fourth of it?

9. What will be the cost of 1 quart 1 pint of ice-cream, at 20 cents a pint?

10. How many cents will 1 ounce of cloves cost at 40 cents for $\frac{1}{2}$ pound?

11. A farmer has two cows and a calf. One cow gives 20 quarts of milk a day, the other gives 25 quarts; but the calf drinks 15. How many quarts a day has the farmer to sell?

12. How many half-pints in a quart of ice-cream?

13. A boy takes 75 cents to the store to get 25 cents' worth of eggs, and the remainder in 5-cent sugar. How many pounds of sugar does he get?

14. A farmer brings to the store 4 dozen eggs worth 20 cents a dozen. How many yards of 8-cent muslin can he buy for the money?

15. What will be the cost of $3\frac{1}{2}$ pounds of flour at 4 cents a pound, and $\frac{1}{2}$ pound of butter at 20 cents a pound?

211. Slate Problems.

1. How many tons of coal at $5 a ton can be bought for $200?

2. A milkman sells 8 cans of milk a day, each can holding 10 gallons. How many quarts does he sell?

3. A merchant takes in $18 on Monday; on Tuesday, $3 less; on Wednesday, as much as on Monday and Tuesday together. How many dollars does he take in on the three days?

4. A man buys horses at $100 each, and sells them at $120 each. What is his profit on 4 horses?

5. There are 2 floors in a school building, and 4 rooms on each floor. How many pupils are in the school if there are 40 in each room?

6. How much will 4 dozen eggs cost at 2 cents for each egg?

7. There are 24 hours in one day. How many hours are there in 9 days?

8. A newsboy sold 23 papers at 3 cents each, and 30 at 1 cent each. How much money did he get for them?

9. There are 16 ounces in 1 pound. How many ounces are there in 9 pounds?

10. A man earns $100 per month and spends $75 per month. How much money will he save in 3 months?

11. Find the sum of 36 and 45; subtract from it 65; multiply the remainder by 6; divide the product by 8. What is the quotient?

12. What will be the cost of $2\frac{1}{4}$ yards dress goods at 32 cents per yard?

13. How many dollars will a woman pay for 6 pairs of shoes at $3 per pair, and an overcoat at $12?

14. A man sells 7 sofas at $14 each. If they cost him $75, what is his profit?

15. A man has 90 cents in silver. He gives $\frac{1}{3}$ of it to his wife. The remainder he divides equally among 4 children. How many cents does each child receive?

212. Review.

Add:

1.	2.	3.	4.	5.
34,216	84,657	378	64,027	9
1,579	2,070	4,154	3,589	81
381	3,889	1,765	4,706	630
4,006	573	28,309	520	1,284
25,718	28	6,524	1,879	15,408
6,285	6	893	20,006	6,275
946	57	25,065	3,845	497
57	1,065	84	217	62

213. Find answers:

6.	7.	8.	9.
80,000	− 13,398	75,191	− 89,688
− 57,059	27,684	− 74,909	90,235

214. Oral Exercises.

1. $\frac{2}{7}$ of 14	5. $\frac{6}{7}$ of 77	9. $\frac{2}{5}$ of 55	13. $\frac{5}{8}$ of 24	17. $\frac{4}{5}$ of 45
2. $\frac{3}{7}$ of 21	6. $\frac{3}{4}$ of 40	10. $\frac{5}{6}$ of 72	14. $\frac{7}{8}$ of 32	18. $\frac{5}{9}$ of 36
3. $\frac{4}{7}$ of 28	7. $\frac{2}{3}$ of 60	11. $\frac{1}{8}$ of 80	15. $\frac{1}{9}$ of 63	19. $\frac{7}{9}$ of 27
4. $\frac{5}{7}$ of 35	8. $\frac{4}{5}$ of 60	12. $\frac{3}{8}$ of 16	16. $\frac{2}{9}$ of 54	20. $\frac{8}{9}$ of 18

215. Slate Exercises.

1. $\frac{2}{7}$ of 98	6. $28 \times 1\frac{1}{7}$	11. $28 \times 6\frac{1}{7}$	16. $600 \times 7\frac{1}{6}$
2. $\frac{3}{7}$ of 105	7. $28 \times 2\frac{1}{7}$	12. $24 \times 9\frac{1}{2}$	17. $276 \times 2\frac{1}{2}$
3. $\frac{4}{7}$ of 112	8. $28 \times 3\frac{1}{7}$	13. $36 \times 8\frac{1}{3}$	18. $888 \times 3\frac{1}{4}$
4. $\frac{5}{7}$ of 119	9. $28 \times 4\frac{1}{7}$	14. $84 \times 3\frac{1}{4}$	19. $999 \times 4\frac{1}{3}$
5. $\frac{6}{7}$ of 126	10. $28 \times 5\frac{1}{7}$	15. $100 \times 4\frac{1}{5}$	20. $555 \times 2\frac{1}{5}$

MULTIPLICATION BY 10.

$10 \times 6 = ?$ $10 \times 7 = ?$ $10 \times 9 = ?$

216. What is the last figure of each product? If we multiply 3 by 10, what figure do we join to the 3? When 5 is multiplied by 10, what figure is joined to the 5?

217. Sight Exercises.

10×10	11×10	12×10	13×10
14×10	15×10	17×10	20×10
25×10	37×10	49×10	55×10
63×10	72×10	81×10	99×10

DIVISION BY 10.

218. When we divide 90 by 10, what is the quotient? What figure of the dividend is dropped in the answer?

219. Sight Exercises.

$80 \div 10$	$100 \div 10$	$120 \div 10$	$160 \div 10$
$190 \div 10$	$240 \div 10$	$300 \div 10$	$360 \div 10$
$400 \div 10$	$450 \div 10$	$510 \div 10$	$620 \div 10$
$790 \div 10$	$870 \div 10$	$960 \div 10$	$1{,}000 \div 10$

SPECIAL DRILLS.

220. Give sums:

$50+30$	$20+60$	$50+40$	$40+50$	$30+60$
$70+20$	$30+30$	$30+20$	$60+20$	$40+20$
$20+40$	$20+70$	$20+50$	$40+40$	$50+20$
$40+30$	$60+30$	$30+40$	$30+50$	$20+30$

221. Give remainders:

$90-50$	$50-20$	$80-40$	$50-30$	$90-70$
$80-30$	$80-60$	$70-30$	$90-40$	$80-50$
$40-20$	$70-20$	$60-40$	$60-20$	$70-40$
$60-30$	$90-30$	$90-60$	$70-50$	$90-20$

222. Give products:

20×2	3×30	20×4	$\frac{1}{3}\times 90$	20×3
2×30	20×3	$\frac{1}{2}\times 60$	$80\times \frac{1}{2}$	$\frac{1}{2}\times 40$
30×3	2×40	$80\times \frac{1}{4}$	3×20	2×20
4×20	30×2	40×2	$\frac{1}{2}\times 80$	$90\times \frac{1}{3}$

223. Give results:

$40\div 2$	$90\div 30$	$80\div 4$	$\frac{1}{2}$ of 60	$40\div 20$
$60\div 30$	$60\div 3$	$\frac{1}{3}$ of 60	$60\div 20$	$\frac{1}{3}$ of 90
$90\div 3$	$80\div 40$	$80\div 2$	$\frac{1}{2}$ of 40	$\frac{3}{4}$ of 40
$80\div 20$	$60\div 2$	$\frac{1}{4}$ of 80	$\frac{2}{3}$ of 30	$\frac{1}{2}$ of 80

224. Give results:

$\frac{1}{2}+\frac{1}{2}$	$1-\frac{1}{2}$	$4\times\frac{1}{2}$	$1\div\frac{1}{2}$	$1\div\frac{1}{4}$
$1\frac{1}{2}+\frac{1}{2}$	$2-\frac{1}{2}$	$\frac{1}{2}\times 10$	$2\div\frac{1}{2}$	$\frac{1}{2}\div\frac{1}{4}$
$2\frac{1}{2}+\frac{1}{2}$	$5-\frac{1}{2}$	$20\times\frac{1}{2}$	$5\div\frac{1}{2}$	$2\div\frac{1}{4}$
$5\frac{1}{2}+\frac{1}{2}$	$10-\frac{1}{2}$	$\frac{1}{2}\times 40$	$10\div\frac{1}{2}$	$3\div\frac{1}{3}$

225. Oral Problems.

1. What will be the cost of 3 pounds coffee at 30¢ per pound?

2. There are 100 cents in a dollar. How many cents in $\frac{1}{5}$ dollar?

3. What will I have to pay for 4 readers at 20 cents each?

4. A boy pays 50 cents for a pair of skates and 20 cents for a pound of candy. How much money does he spend?

5. What will be the price of $\frac{1}{4}$ pound of 80-cent tea?

6. Find the cost of $\frac{1}{2}$ yard of silk at 60¢ per yard.

7. A store-keeper sells 80 marbles for 20 cents. How many does he sell for 1 cent?

8. There are seats for 40 pupils in 1 class-room. For how many pupils are there seats in 2 rooms?

9. A man bought 3 pounds of 20-cent coffee. How much did he pay for it?

10. How many ounces in 10 pounds?

11. How many quarts in 80 gallons?

12. The pupils of a certain class solve 20 problems each day. How many do they solve in 5 days?

13. A farmer had 90 sheep. How many did he have after selling 50 sheep?

14. A family uses 3 quarts of milk a day. How many quarts are used in a month of 30 days?

DIVISION BY 10.

226. $19 \div 10 = 1\frac{9}{10}$ $\quad 27 \div 10 = ?$ $\quad 33 \div 10 = ?$

Notice the remainder.

$101 \div 10 = ?$ $\quad 113 \div 10 = ?$ $\quad 127 \div 10 = ?$

What figure of the dividend is the same as the remainder?

227. Sight Exercises.

87 ÷ 10	103 ÷ 10	127 ÷ 10	161 ÷ 10
192 ÷ 10	249 ÷ 10	301 ÷ 10	363 ÷ 10
402 ÷ 10	490 ÷ 10	515 ÷ 10	626 ÷ 10
697 ÷ 10	718 ÷ 10	823 ÷ 10	998 ÷ 10

228. Slate Exercises. Review.

Add:

1.	2.	3.	4.
$186.54	$493.05	$936.84	$1,925.84
43.79	27.56	27.00	600.03
287.60	8.32	18.95	285.92
.65	.95	.38	67.15
9.83	.04	6.22	496.88
354.00	1.18	25.80	37.23
2.93	23.59	47.11	4,286.84
12.08	186.18	164.08	.99

5. Two hundred eighty-seven dollars and sixteen cents; ninety-four dollars and ten cents; four thousand two hundred seventy-eight dollars and five cents; seventy-three thousand six hundred twenty-nine dollars; eight thousand eight dollars and eight cents; ninety-nine cents; twenty-five dollars eleven cents; four cents.

229. Subtract:

6.	7.	8.	9.	10.
$198.50	$200.00	$600.00	$361.82	$983.27
29.86	83.07	.07	279.93	486.00

11. From nine hundred sixty-two dollars and eighty-four cents take five hundred seventy-six dollars and seventy-six cents.

12. Find the difference between eight hundred four dollars and ninety-three cents and nine hundred dollars.

13. From ninety-nine dollars take ninety-nine cents.

14. I paid eighty-four dollars and twenty cents for some tea and sold it for one hundred five dollars and fifteen cents. What was my profit?

15. Find the difference between six hundred seventy-five dollars and eighty-nine cents and four hundred eighteen dollars and ninety-eight cents.

230. Multiply:

16.	17.	18.	19.	20.
\$1.65 × 8	\$22.75 × 6	\$101.50 × 4	\$83.75 × 5	\$29.63 × 7

231. Divide:

21. 3)\$29.70	23. 5)\$191.75	25. 7)\$130.13
22. 4)\$86.00	24. 6)\$240.78	26. 8)\$902.00

232. Oral Problems.

1. What will a boy have to pay for a 60-cent pair of skates and a 30-cent pair of gloves?

2. Henrietta bought 3 yards of dress goods at 30 cents per yard. What was the amount of her bill?

3. A girl has 20 cents in her bank. How many more cents must she get to have half a dollar?

4. What will be the cost of a 50-cent ball and three 10-cent bats?

5. How many packs of fire-crackers at 4 cents each can be bought for 80 cents?

6. John received 30 cents from his father and 20 cents from his mother. How many baseballs at 10 cents each can he buy with the money?

7. Mary has 60 cents. Jane has 20 cents less. How many cents has Jane?

8. If 3 pounds of coffee cost 90 cents, what will be the cost of 1 pound?

9. How many pounds of tea at 40 cents a pound can a person buy for 80 cents?

10. How much cloth worth a dollar a yard can be bought for 25 cents?

233. Slate Problems.

1. Find the cost of 4 barrels of flour at $5.50 per barrel.

2. If 3 yards of silk cost $7.50, what is the price of a yard?

3. Divide $18.60 among 12 persons, giving each the same amount.

4. A man gave 6 boys 10 cents each and had 25 cents remaining. What had he at first?

5. How much change from a dollar bill will a person receive who buys 5 yards of lace at 17¢ per yard?

6. If I pay 90 cents for 3 yards of linen, what would I have to pay for $1\frac{1}{2}$ yards?

7. A man had 96 chestnuts. He divided one-half of them equally among his three children. How many did each receive?

8. If 6 dozen eggs cost $1.44, what is the price of 1 dozen? Of 1 egg?

9. A man earns $2.50 per day, and spends $2.10. How much will he save in 2 days?

10. What will be the cost of $1\frac{3}{4}$ yards of ribbon at 40 cents per yard?

234. Slate Exercises.

Multiply:

1. $84 \times 4\frac{1}{2}$	6. $119 \times 9\frac{1}{7}$	11. $576 \times 7\frac{1}{8}$	16. $180 \times 12\frac{1}{9}$
2. $63 \times 3\frac{1}{3}$	7. $240 \times 8\frac{1}{10}$	12. $177 \times 5\frac{1}{3}$	17. $336 \times 10\frac{1}{8}$
3. $96 \times 5\frac{1}{6}$	8. $522 \times 4\frac{1}{6}$	13. $252 \times 3\frac{1}{4}$	18. $480 \times 11\frac{1}{5}$
4. $84 \times 7\frac{1}{4}$	9. $344 \times 9\frac{1}{8}$	14. $315 \times 8\frac{1}{5}$	19. $432 \times 12\frac{1}{8}$
5. $120 \times 6\frac{1}{5}$	10. $576 \times 2\frac{1}{12}$	15. $125 \times 6\frac{1}{5}$	20. $121 \times 11\frac{1}{11}$

235. Philadelphia Public Schools. — Oral Work.

1. Place before the pupil the following expressions. Require him to perform with splints or pencils the operations indicated: —

	$15 \div 5$		$\frac{1}{4}$ of 12
2.	$9+8+6$	11.	25 is how much more than 16?
3.	$15-9+12$	12.	26 is how much less than 35?
4.	$28+5-6$	13.	32 and 10 are how many?
5.	$32-6+8$	14.	In 45 are how many tens and ones?
6.	8 times 5	15.	How many 8's are in 48?
7.	4 times 9	16.	How many 12's are in 36?
8.	7 times 6	17.	In 54 are how many 9's?
9.	12×5	18.	Five times 8 are how many 10's?
10.	$\frac{1}{4}$ of 20×9	19.	$9 \times 8 \div 12 =$ what number?

20. Ask the pupils to look at the teacher's desk. Ask them to tell how high it is, and how long it is.

21. If 3 pounds of coffee cost 60 cents, what is the cost of one pound?

236. Written Work.

1. To 43 add 17. Take 25 from the sum.

2. From 75 yards take 28 yards.

3. Multiply 18 by 5.

4. Divide 76 by 9.

5. Mary is 31 years old and Fanny is 15 years younger. What is Fanny's age?

6. If 3 bushels of apples are in one barrel, how many barrels will 84 bushels fill?

7. John earned 25 cents one day, 18 cents another day, and 35 cents another day. How much more must he earn to have a dollar?

8. Draw an oblong. Place a dot on each corner. Place two other dots near the middle of each side.

Do an example to show how many dots are on five such oblongs.

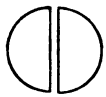
HALVES.

237. **Sight Exercises.**

Add:

1 half pie + 1 half pie $\frac{1}{2}$ + $\frac{1}{2}$ $1\frac{1}{2}$ pt. + $\frac{1}{2}$ pt.

$\frac{1}{2}$ lb. + $\frac{1}{2}$ lb. + $\frac{1}{2}$ lb. $2\frac{1}{2}$ oz. + $\frac{1}{2}$ oz. $2\frac{1}{2}$ yd. + 1 yd.



$2\frac{1}{2}$ feet	$2\frac{1}{2}$ qt.	$2\frac{1}{2}$ gal.	$3\frac{1}{2}$	$5\frac{1}{2}$
2 feet	$1\frac{1}{2}$ qt.	$2\frac{1}{2}$ gal.	$2\frac{1}{2}$	$1\frac{1}{2}$
$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{1}{2}$
$\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	3

238. **Slate Exercises.**

Add:

1. $13\frac{1}{2} + 4\frac{1}{2}$
2. $27\frac{1}{2} + 15$
3. $36\frac{1}{2} + 8\frac{1}{2}$
4. $23\frac{1}{2} + 42\frac{1}{2} + 6$
5. $17\frac{1}{2} + 29 + 4\frac{1}{2}$
6. $25 + 25\frac{1}{2} + 25$
7. $12\frac{1}{2} + 12\frac{1}{2}$
8. $21\frac{1}{2} + 32\frac{1}{2} + 3$
9. $24\frac{1}{2} + 24\frac{1}{2}$
10. $13\frac{1}{2} + 26 + 47$

239. Find missing numbers:

11. $25\frac{1}{2}$	12. 34	13. $9\frac{1}{2}$	14. $8\frac{1}{2}$	15. $27\frac{1}{2}$
+	+	+	+	+
$49\frac{1}{2}$	$68\frac{1}{2}$	10	10	30

240. Subtract:

16. $49\frac{1}{2}$	17. $68\frac{1}{2}$	18. 10	19. 10	20. 30
$25\frac{1}{2}$	34	$9\frac{1}{2}$	$8\frac{1}{2}$	$27\frac{1}{2}$
21. 10	22. 25	23. 32	24. 54	25. 75
$5\frac{1}{2}$	$6\frac{1}{2}$	$18\frac{1}{2}$	$50\frac{1}{2}$	$74\frac{1}{2}$

FOURTHS.

241. Oral Exercises.

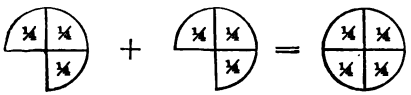
How many fourths in a pie? How many quarters in a dollar? How many fourths in half a pie? $\frac{2}{4} =$ 1 what?

$\frac{1}{4}$ pie $+ \frac{1}{4}$ pie $=$ what? $\$\frac{1}{4} + \$\frac{1}{4} + \$\frac{1}{4} =$ how many fourths? $\frac{3}{4}$ lb. $+ \frac{1}{4}$ lb. $=$ what?

242. Sight Exercises.

$2\frac{1}{4}$ pint $+ \frac{1}{4}$ pint $\quad 1\frac{3}{4}$ yard $+ \frac{1}{4}$ yard $\quad \$\frac{1}{4} + \$\frac{1}{4} + \$\frac{1}{4} + \$\frac{1}{4}$

$2\frac{3}{4}$	$2\frac{3}{4}$	$4\frac{1}{4}$	$6\frac{1}{4}$	$3\frac{1}{4}$	$7\frac{1}{4}$	$6\frac{3}{4}$
$+2$	$+1\frac{1}{4}$	$+2\frac{1}{4}$	$+9$	$+5\frac{3}{4}$	$+8\frac{1}{4}$	$+6\frac{3}{4}$



$\frac{6}{4} = ?$

243. Slate Exercises.

Add:

26. $1\frac{1}{4}$	27. $2\frac{3}{4}$	28. $2\frac{1}{4}$	29. $1\frac{1}{4}$	30. $4\frac{3}{4}$
2	3	$12\frac{1}{4}$	$2\frac{3}{4}$	5
$8\frac{1}{4}$	$4\frac{1}{4}$	2	3	$4\frac{3}{4}$
31. $\frac{3}{4}$	32. $1\frac{3}{4}$	33. $27\frac{3}{4}$	34. $84\frac{3}{4}$	35. $67\frac{1}{4}$
$\frac{3}{4}$	$1\frac{3}{4}$	$19\frac{1}{4}$	$14\frac{3}{4}$	$25\frac{1}{4}$

244. Find missing numbers:

36. $13\frac{1}{4}$	37. 15	38. $18\frac{1}{4}$	39. $24\frac{3}{4}$	40. $8\frac{3}{4}$
+	+	+	+	+
$26\frac{1}{4}$	$30\frac{1}{4}$	19	25	10
41. $6\frac{1}{4}$	42. $7\frac{1}{4}$	43. $5\frac{1}{4}$	44. $23\frac{1}{4}$	45. $28\frac{3}{4}$
+	+	+	+	+
$6\frac{1}{2}$	$7\frac{3}{4}$	7	$25\frac{1}{2}$	30

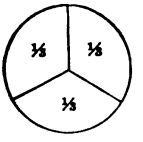
245. Subtract:

46. $46\frac{1}{4}$	47. $40\frac{1}{4}$	48. 20	49. 30	50. $25\frac{3}{4}$
$23\frac{1}{4}$	20	$10\frac{1}{4}$	$15\frac{3}{4}$	$15\frac{1}{4}$
51. $9\frac{1}{2}$	52. $17\frac{3}{4}$	53. $84\frac{3}{4}$	54. $48\frac{3}{4}$	55. 46
$6\frac{1}{4}$	$15\frac{1}{2}$	60	$19\frac{3}{4}$	$17\frac{1}{4}$

THIRDS.

246. Oral Exercises.

When a thing is divided into three equal parts, what is each part called? Draw a square and divide it into thirds. How many thirds in 2 pies? In 3 pies?

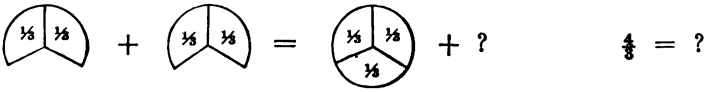


$\frac{1}{3}$ foot $+ \frac{1}{3}$ foot $= ?$ $\frac{1}{3}$ yard $+ \frac{1}{3}$ yard $+ \frac{1}{3}$ yard $= ?$

$\frac{2}{3}$ year $+ \frac{1}{3}$ year $= ?$ $\frac{2}{3}$ month $+ \frac{2}{3}$ month $= ?$

247. Sight Exercises.

$2\frac{1}{3}$	$3\frac{2}{3}$	$4\frac{1}{3}$	$5\frac{2}{3}$	$7\frac{2}{3}$
$+3$	$+6$	$+4\frac{1}{3}$	$+1\frac{1}{3}$	$+1\frac{2}{3}$



248. Slate Exercises.

Add:

56. $43\frac{1}{3}$	57. $59\frac{2}{3}$	58. $63\frac{2}{3}$	59. $48\frac{2}{3}$	60. $39\frac{1}{3}$
$30\frac{1}{3}$	$10\frac{1}{3}$	$4\frac{2}{3}$	15	$5\frac{2}{3}$
61. $27\frac{1}{3}$	62. $6\frac{2}{3}$	63. $18\frac{1}{3}$	64. $\frac{2}{3}$	65. 49
$5\frac{1}{3}$	$3\frac{2}{3}$	$4\frac{2}{3}$	$4\frac{1}{3}$	$3\frac{2}{3}$
3	5	7	11	$\frac{1}{3}$

249. Find missing numbers:

66.	67.	68.	69.	70.
$8\frac{2}{3}$	$5\frac{1}{3}$	$6\frac{2}{3}$	$7\frac{1}{3}$	$4\frac{1}{3}$
+	+	+	+	+
$10\frac{2}{3}$	$10\frac{1}{3}$	10	$10\frac{2}{3}$	10

250. Subtract:

71.	72.	73.	74.	75.
$25\frac{2}{3}$	26	$26\frac{2}{3}$	26	$26\frac{1}{3}$
$16\frac{2}{3}$	$16\frac{2}{3}$	16	$16\frac{1}{3}$	$16\frac{1}{3}$
76.	**77.**	**78.**	**79.**	**80.**
$84\frac{2}{3}$	50	63	$47\frac{2}{3}$	39
$58\frac{1}{3}$	$49\frac{2}{3}$	$50\frac{1}{3}$	$16\frac{1}{3}$	$7\frac{2}{3}$

251. Oral Problems.

1. A boy has 5 packs of fire-crackers. After shooting off a pack and a half, how many will he have?

2. A farmer cut $2\frac{1}{2}$ tons of hay on one piece of land and 9 tons on another. How many tons of hay did he cut?

3. If it takes $2\frac{1}{2}$ yards for a jacket, and $3\frac{1}{2}$ yards for a coat, how many yards will be needed for both?

4. $2\frac{1}{3}$ yards of ribbon are cut from a 10-yard roll. How many yards remain?

5. From a tub containing $25\frac{3}{4}$ pounds of butter there are sold $5\frac{1}{2}$ pounds. How many pounds are left?

6. A quarter of a pound of tea is taken from a 2-pound package. How much tea is there left in the package?

7. A real estate agent sold $2\frac{3}{4}$ acres from a 10-acre plot. How much land is there still to sell?

8. Mr. Jones brought to market $12\frac{3}{4}$ bushels of potatoes. He sold $10\frac{1}{4}$ bushels. How many bushels did he bring home?

9. A store-keeper sold 2 pieces of silk, $2\frac{3}{8}$ yards in each piece. How many yards did he sell?

10. How many pounds of coffee are there in 2 packages weighing $1\frac{3}{4}$ pounds each?

252. Slate Problems.

1. Find the weight of 4 tubs of lard containing $24\frac{1}{2}$, 26, $25\frac{1}{2}$, and $27\frac{1}{2}$ pounds, respectively.

2. A barrel of sugar weighs, including the barrel, 310 pounds. The barrel weighs $20\frac{1}{2}$ pounds. How much does the sugar weigh?

3. A merchant sold $2\frac{3}{4}$ yards of cloth to one customer, $3\frac{1}{4}$ yards to another, $4\frac{1}{4}$ yards to a third, and $5\frac{3}{4}$ yards to a fourth. How many yards did he sell in all?

4. A grocer bought $13\frac{1}{8}$ dozen eggs from one dealer, and $47\frac{7}{8}$ from another. How many dozen did he buy?

5. If $16\frac{3}{8}$ yards of silk are cut from a piece containing 30 yards, how many yards are left?

6. I own 20 acres of land. I keep $18\frac{1}{4}$ acres, and sell the rest at 40 dollars per acre. How much do I receive for it?

7. There are 10 dozen oranges in a box. $3\frac{1}{3}$ dozen are spoiled. How many good oranges are there?

8. If 2 gallons and 1 quart of milk are sold from a 10-gallon can, how much milk remains?

9. School is in session 5 hours a day. How much time is a boy in school on Monday, if he comes $1\frac{1}{4}$ hours late in the morning and $\frac{1}{2}$ hour late in the afternoon?

10. A girl spends $\frac{1}{3}$ of the day in school, preparing her lessons, and doing other work; she spends $\frac{1}{8}$ of the day at her meals and play; she sleeps the remainder of the time. How many hours does she sleep?

CHAPTER IV.

MULTIPLIERS AND DIVISORS OF TWO OR MORE FIGURES. — MULTIPLIERS CONTAINING FRACTIONS. — ADDITION AND SUBTRACTION OF EASY MIXED NUMBERS. — INCH, FOOT, AND YARD.

HALVES AND FOURTHS.

253. Oral Exercises.

Draw a circle to represent a pie. Divide it into two equal parts. What is each part called? Divide it into four equal parts. What is each part called?

How many fourths in 1?

How many fourths in half a pie? How many fourths in $\frac{1}{2}$?

How many fourths in 2? Eight fourths are how many?

254. Oral Problems.

1. A boy spends $\$\frac{1}{2}$ for a knife and $\$\frac{1}{4}$ for a ball. How many quarter dollars does he pay for both?

2. A girl buys $\frac{2}{4}$ pound of candy at one store and $\frac{1}{4}$ pound at another. How much candy does she buy at both stores?

3. If it takes $3\frac{1}{4}$ yards of cloth for a coat and $1\frac{1}{4}$ yards for a vest, how many yards will it take for both?

4. If a geography costs $\$\frac{3}{4}$, a reader $\$\frac{1}{4}$, and a grammar $\$\frac{1}{2}$, what will be paid for the three books?

5. The school is $\frac{2}{4}$ of a mile from Henry's house. How far does he walk going and coming?

255. Slate Exercises.

Add:

1.	2.	3.	4.	5.
$36\frac{1}{4}$	$56\frac{1}{4}$	$83\frac{1}{4}$	$63\frac{1}{2}$	$27\frac{3}{4}$
8	$3\frac{1}{4}$	$6\frac{1}{4}$	$6\frac{1}{4}$	$63\frac{1}{4}$
$5\frac{3}{4}$	$9\frac{1}{4}$	$7\frac{1}{4}$	$2\frac{1}{4}$	9

6. $3\frac{1}{4} + 6 + 87\frac{1}{2}$
7. $75\frac{1}{2} + 6\frac{1}{4} + 3\frac{1}{2}$
8. $36\frac{3}{4} + 27 + 6\frac{1}{2}$
9. $62\frac{1}{2} + 7\frac{1}{2} + 16\frac{1}{4}$
10. $3\frac{1}{4} + 32\frac{3}{4} + 7\frac{1}{4}$
11. $14\frac{1}{2} + 3\frac{1}{4} + 60\frac{1}{4}$.

256. Oral Problems.

1. A boy has $\$2\frac{1}{4}$. How much will he have after he spends $\$\frac{1}{4}$?

2. A woman has 15 yards of muslin. How much will she have after she uses $14\frac{3}{4}$ yards?

3. A milk can holds 5 gallons, when full. If there are $4\frac{1}{2}$ gallons in it, how much more milk will it hold?

4. To 3 gallons 3 quarts add 1 gallon 1 quart.

5. A girl wishes to buy a doll that costs $\$1\frac{1}{4}$. If she has $\$\frac{3}{4}$, how much more does she need?

257. Slate Exercises.

Find missing numbers:

1.	2.	3.	4.	5.
$65\frac{1}{4}$	$\$10\frac{1}{4}$	$63\frac{3}{4}$ gal.	$35\frac{1}{4}$ lb.	$30\frac{3}{4}$
+	+	+	+	+
$70\frac{1}{2}$	$\$12\frac{3}{4}$	$72\frac{3}{4}$ gal.	36 lb.	35

258. Subtract:

6.	7.	8.	9.	10.
$\$65\frac{1}{2}$	$63\frac{3}{4}$ yd.	$792\frac{1}{4}$ lb.	40 ft.	50 pt.
$\$5\frac{1}{4}$	$19\frac{1}{2}$ yd.	$26\frac{1}{4}$ lb.	$\frac{1}{2}$ ft.	$\frac{1}{4}$ pt.

11.	12.	13.	14.	15.
40	$40\frac{3}{4}$	$40\frac{3}{4}$	$275\frac{1}{4}$	$275\frac{3}{4}$
$\frac{3}{4}$	$31\frac{1}{2}$	$29\frac{3}{4}$	$68\frac{1}{4}$	$68\frac{1}{4}$

259. Slate Problems.

1. A sailor has 10 yards of cloth. He uses $3\frac{1}{2}$ yards for a coat and $1\frac{1}{2}$ yards for a vest. How many yards has he left?

2. I buy $1\frac{1}{4}$ pounds of tea at 60 cents per pound. How much change from a dollar should I receive?

3. John buys 9 pounds of starch and has it put up into four packages. If the starch costs 8 cents per pound, what is each package worth?

4. A box of eggs contains 30 dozen. How many eggs will be left after $3\frac{1}{2}$ dozen are sold?

5. A woman has 15 yards 2 feet of ribbon. How much ribbon has she after using 6 yards 1 foot?

6. A grocer has 55 pounds of tea. How many pounds has he after selling $25\frac{1}{2}$ pounds and buying $10\frac{1}{2}$ pounds?

7. What will $1\frac{3}{4}$ pounds of allspice cost at 4 cents per ounce?

8. Sold $3\frac{3}{4}$ pounds of butter to one customer, and $2\frac{1}{2}$ pounds to another. How much was received at 28 cents per pound?

9. A man works 300 days in a year, receiving $\$3\frac{1}{2}$ per day. How much does he earn in a year?

10. I have $14\frac{1}{2}$ pounds of candy. How many pounds will I have after selling nine $\frac{1}{4}$-pound boxes of candy?

11. A grocer sells $47\frac{1}{2}$ pounds of flour from a barrel containing 196 pounds. How many pounds are left?

12. How many yards of ribbon are there in three rolls containing $24\frac{1}{2}$ yards each?

13. There are $49\frac{1}{2}$ pounds of butter in a tub. The tub itself weighs $10\frac{1}{2}$ pounds. How many pounds do both weigh together?

14. How many inches of cord are there in a piece $1\frac{3}{4}$ yards long?

15. A boy is 12 years 7 months old; his sister is 9 years 3 months old. How many months older is the boy?

MULTIPLICATION BY 11 *AND* 12.

260. Make tables of 11's and 12's. Learn them.

261. Sight Exercises.

Give products:

10 × 8	11 × 6	3 × 12	11 × 11	9 × 9
8 × 8	12 × 6	5 × 11	6 × 12	10 × 10
9 × 10	12 × 12	10 × 11	11 × 7	9 × 11
11 × 10	12 × 2	12 × 4	12 × 3	8 × 12
4 × 11	12 × 9	11 × 12	12 × 10	12 × 11
7 × 12	10 × 12	8 × 9	11 × 8	5 × 12
11 × 9	8 × 11	12 × 8	7 × 7	10 × 9
9 × 7	7 × 9	9 × 12	12 × 7	12 × 5
11 × 6	11 × 4	11 × 3	11 × 3	9 × 6

262. Slate Exercises.

Multiply by 11. By 12.

1. 13	**11.** 31	**21.** 61	**31.** 615	**41.** 7,908
2. 14	**12.** 32	**22.** 62	**32.** 720	**42.** 8,270
3. 15	**13.** 33	**23.** 73	**33.** 816	**43.** 8,085
4. 16	**14.** 34	**24.** 84	**34.** 924	**44.** 7,888
5. 17	**15.** 41	**25.** 93	**35.** 1,062	**45.** 7,467
6. 21	**16.** 42	**26.** 111	**36.** 2,345	**46.** 6,320
7. 22	**17.** 43	**27.** 213	**37.** 3,124	**47.** 5,908
8. 23	**18.** 50	**28.** 324	**38.** 4,516	**48.** 4,567
9. 24	**19.** 51	**29.** 456	**39.** 5,729	**49.** 3,095
10. 25	**20.** 52	**30.** 507	**40.** 6,384	**50.** 2,999

DIVISION BY 11 *AND* 12.

263. Slate Exercises.

Divide by 11. By 12.

51.	132	**63.**	2,772	**75.**	8,926	**87.**	14,988
52.	264	**64.**	3,960	**76.**	9,431	**88.**	16,700
53.	396	**65.**	5,412	**77.**	10,296	**89.**	18,008
54.	528	**66.**	7,392	**78.**	12,220	**90.**	21,012
55.	660	**67.**	9,108	**79.**	14,124	**91.**	24,680
56.	792	**68.**	1,876	**80.**	17,160	**92.**	27,727
57.	924	**69.**	2,345	**81.**	36,300	**93.**	30,605
58.	1,056	**70.**	3,670	**82.**	46,992	**94.**	36,318
59.	1,188	**71.**	4,281	**83.**	78,276	**95.**	49,999
60.	1,320	**72.**	5,302	**84.**	93,324	**96.**	53,827
61.	1,584	**73.**	6,749	**85.**	10,796	**97.**	62,986
62.	1,848	**74.**	7,835	**86.**	12,209	**98.**	70,304

264. Review. Slate Exercises.

99.	$35\frac{1}{2}+18\frac{1}{2}$	**109.**	$186\times\frac{2}{3}$
100.	$17\frac{1}{4}+23\frac{3}{4}$	**110.**	$248\times\frac{1}{2}$
101.	$27\frac{1}{2}+39\frac{1}{2}$	**111.**	$324\times\frac{3}{4}$
102.	$64\frac{2}{3}+16\frac{1}{3}$	**112.**	$645\times\frac{1}{5}$
103.	$49\frac{1}{2}+25\frac{1}{2}$	**113.**	$360\times1\frac{1}{6}$
104.	$45\frac{1}{2}+26\frac{1}{2}$	**114.**	$729\times1\frac{1}{9}$
105.	$1\frac{1}{2}+1\frac{1}{2}+1\frac{1}{4}$	**115.**	$488\times\frac{3}{8}$
106.	$2\frac{2}{3}+2\frac{2}{3}+2\frac{2}{3}$	**116.**	$309\times1\frac{1}{3}$
107.	$1\frac{1}{3}+2\frac{1}{3}+3\frac{1}{3}$	**117.**	$420\times1\frac{1}{5}$
108.	$1\frac{1}{4}+2\frac{1}{4}+3\frac{1}{4}+4\frac{1}{4}$	**118.**	$420\times\frac{4}{5}$

119. $324 \times 1\frac{1}{4}$
120. $408 \times \frac{5}{8}$
121. $968 \times 1\frac{1}{8}$
122. $924 \times 1\frac{1}{7}$
123. $20 \times 1\frac{1}{2}$
124. $20 \times 2\frac{1}{2}$
125. $20 \times 3\frac{1}{2}$
126. $20 \times 4\frac{1}{2}$
127. $20 \times 1\frac{1}{4}$
128. $20 \times 1\frac{3}{4}$
129. $30 \times 1\frac{1}{3}$
130. $30 \times 1\frac{2}{3}$
131. $30 \times 2\frac{2}{3}$
132. $20 \times 2\frac{3}{4}$
133. $20 \times 1\frac{2}{5}$
134. $20 \times 2\frac{3}{5}$
135. $20 \times 3\frac{4}{5}$
136. $30 \times 1\frac{5}{6}$
137. $30 \times 3\frac{5}{6}$
138. $70 \times 8\frac{5}{7}$

265. Find missing numbers:

139. $54\frac{1}{2} - 29\frac{1}{4} = \ ?$
140. $? + 49\frac{1}{3} = 50$
141. $40\frac{1}{4} + \ ? \ = 42$
142. $? + 38\frac{1}{4} = 70\frac{1}{2}$
143. $79\frac{3}{4} - 30\frac{1}{2} = \ ?$
144. $37\frac{2}{3} - 18\frac{1}{3} = \ ?$
145. $? + \frac{1}{2} = 59$
146. $60\frac{1}{2} + \ ? = 80$
147. $75\frac{1}{3} + \ ? = 100$
148. $? + 6\frac{3}{4} = 59$

266. Oral Problems.

1. If 8 ounces of tea cost 40 cents, what will be the price of 5 ounces?

2. How much will have to be paid for 3 quarts and a pint of milk at 3 cents per pint?

3. What will 3 pounds of sugar cost if 5 pounds cost 30 cents?

4. If ice-cream is worth 40 cents per quart, how much will $\frac{1}{2}$ pint be worth?

5. If oil costs 8 cents per gallon, how much can be bought for 1 cent?

6. What will 8 yards of muslin cost at 12 cents per yard?

7. At $11 each, how many calves can be bought for $132?

8. How much does a man earn in a week if he earns $6 Monday, $7 Tuesday, $8 Wednesday, $9 Thursday, $7 Friday, and $6 Saturday?

9. Mr. Arch moves into a house Jan. 15. How many days will he have been in the house on Jan. 23?

10. How many 9-cent books can be bought for 75 cents, and how much money will be left?

267. Slate Problems.

1. A man spends $90. He pays $18 for a coat and the remainder for 12 barrels of flour. How much does each barrel of flour cost?

2. At 3 cents an ounce, find the cost of 2 pounds of pepper.

3. A yard of cloth is worth 96 cents. What is the value of three-fourths of a yard?

4. How many ounces in 12 pounds?

5. How many gallons in 96 pints?

6. What will be the cost of 2 dozen oranges at 4 cents for each orange?

7. There are 95 men in a company and 10 companies in a regiment. How many men are there in a regiment?

8. A grocer had on hand Monday morning 99 eggs. During the day he sold 57 eggs and bought 32 eggs. How many had he on hand Monday night?

9. A merchant had 90 barrels of flour. He sold 28 barrels to one man and 34 to another. How many barrels had he left?

10. A farmer has 42 pigs. He keeps 29 pigs and sells the others at $5 each. How much does he receive for the pigs he sells?

11. What are 12 horses worth at $120 each?

12. $240 are paid for 8 overcoats. What is the price of one overcoat?

13. If there are 12 inches in a foot, how many feet are there in 600 inches?

14. There are 3 feet in a yard. How many inches are there in 10 yards?

15. What will be the cost of 1 gallon, 1 quart, 1 pint of milk, at 3 cents a pint?

268. Sight Exercises.

Give answers:

1. $30+60-40$
2. $20+30+40$
3. $(20+10)\times 3$
4. $(50+30)\div 4$
5. $\frac{1}{4}$ of $(30+50)$
6. $80-40+50$
7. $90-30-40$
8. $(90-20)\div 7$
9. $\frac{1}{3}$ of $(90-30)$
10. $(80-60)\times 4$
11. $(2\times 20)+50$
12. $2\times 20\times 2$
13. $(4\times 20)-50$
14. $(20\times 4)\div 40$
15. $\frac{1}{3}$ of (20×4)
16. $(80\div 20)+9$
17. $(90\div 10)\div 3$
18. $80\div(4\times 2)$
19. $\frac{1}{4}$ of $(80\div 10)$
20. $(90\div 30)-2$
21. ($\frac{1}{3}$ of 90) + 60
22. ($\frac{2}{3}$ of 60) − 20
23. $(80\div 4)\times 3$
24. ($\frac{1}{2}$ of 60) ÷ 3

269. Give missing numbers:

1. $30+40-\ ?\ =20$
2. $\frac{1}{4}$ of $(50+\ ?)=20$
3. $20+\ ?\ +40=70$
4. $(50-\ ?)\times\ 4=40$
5. $(80\div 40)+\ ?=\ 5$
6. $(3\times\ ?)\ +10=70$
7. $2\times 10\ \times\ ?=60$
8. $(80\div\ ?)\ \div\ 2=\ 2$
9. $(\ ?\div 40)\ \times\ 5=10$
10. ($\frac{1}{2}$ of 80) ÷ ? = 2

MULTIPLIERS ENDING IN 0.

270. Oral Exercises.

$6 \times 4 = ?$ $4 \times 6 = ?$ $20 \times 4 = ?$ $4 \times 20 = ?$ $12 \times 20 = ?$

Multiplying by 20 is the same as multiplying by 2 and affixing a cipher to the product.

$4 \times 30 = ?$ $9 \times 30 = ?$ $12 \times 30 = ?$ $13 \times 20 = ?$ $14 \times 20 = ?$ $13 \times 30 = ?$ $14 \times 30 = ?$

271. Slate Exercises.

Find products:

1. 15×30	**7.** 21×90	**13.** 345×40	**19.** 987×100
2. 16×40	**8.** 22×100	**14.** 456×50	**20.** 876×110
3. 17×50	**9.** 23×110	**15.** 567×60	**21.** 765×120
4. 18×60	**10.** 24×120	**16.** 678×70	**22.** $1{,}654 \times 60$
5. 19×70	**11.** 123×20	**17.** 789×80	**23.** $1{,}983 \times 50$
6. 20×80	**12.** 234×30	**18.** 890×90	**24.** $2{,}476 \times 40$

DIVISORS ENDING IN 0.

272. Slate Exercises.

Find quotients:

25. $80 \div 20$	**33.** $600 \div 60$	**41.** $10{,}010 \div 70$
26. $160 \div 20$	**34.** $980 \div 70$	**42.** $14{,}160 \div 60$
27. $240 \div 20$	**35.** $1{,}200 \div 80$	**43.** $23{,}450 \div 50$
28. $280 \div 20$	**36.** $1{,}350 \div 90$	**44.** $36{,}960 \div 60$
29. $360 \div 30$	**37.** $1{,}680 \div 120$	**45.** $40{,}040 \div 70$
30. $420 \div 30$	**38.** $1{,}760 \div 110$	**46.** $54{,}360 \div 60$
31. $480 \div 40$	**39.** $2{,}340 \div 90$	**47.** $65{,}350 \div 50$
32. $550 \div 50$	**40.** $4{,}640 \div 80$	**48.** $76{,}920 \div 40$

273. Divide

49. 81 ÷ 10	**57.** 565 ÷ 80	**65.** 13,415 ÷ 90
50. 81 ÷ 20	**58.** 729 ÷ 20	**66.** 17,643 ÷ 100
51. 81 ÷ 40	**59.** 843 ÷ 30	**67.** 20,241 ÷ 110
52. 121 ÷ 60	**60.** 5,281 ÷ 40	**68.** 23,887 ÷ 120
53. 203 ÷ 50	**61.** 6,352 ÷ 50	**69.** 39,169 ÷ 110
54. 189 ÷ 30	**62.** 7,565 ÷ 60	**70.** 48,062 ÷ 90
55. 286 ÷ 70	**63.** 9,034 ÷ 70	**71.** 62,883 ÷ 80
56. 367 ÷ 90	**64.** 11,367 ÷ 80	**72.** 79,941 ÷ 70

274. Divide:

73. 91 ÷ 20	**88.** 567 ÷ 90	**103.** 69,365 ÷ 90
74. 71 ÷ 30	**89.** 4,341 ÷ 80	**104.** 72,468 ÷ 80
75. 91 ÷ 40	**90.** 8,764 ÷ 70	**105.** 43,210 ÷ 70
76. 121 ÷ 60	**91.** 10,123 ÷ 60	**106.** 34,280 ÷ 60
77. 53 ÷ 20	**92.** 23,478 ÷ 50	**107.** 54,210 ÷ 50
78. 72 ÷ 20	**93.** 34,679 ÷ 40	**108.** 3,280 ÷ 40
79. 92 ÷ 40	**94.** 46,258 ÷ 30	**109.** 4,320 ÷ 30
80. 172 ÷ 50	**95.** 52,814 ÷ 20	**110.** 6,790 ÷ 20
81. 133 ÷ 30	**96.** 72,681 ÷ 30	**111.** 6,584 ÷ 110
82. 143 ÷ 30	**97.** 94,835 ÷ 40	**112.** 7,230 ÷ 120
83. 153 ÷ 40	**98.** 16,807 ÷ 50	**113.** 17,235 ÷ 110
84. 145 ÷ 50	**99.** 33,336 ÷ 60	**114.** 18,695 ÷ 120
85. 176 ÷ 60	**100.** 1,478 ÷ 70	**115.** 93,246 ÷ 90
86. 247 ÷ 70	**101.** 23,005 ÷ 80	**116.** 81,188 ÷ 80
87. 459 ÷ 80	**102.** 9,876 ÷ 90	**117.** 12,345 ÷ 70

275. Mixed Numbers. Review.

Add:

1. $18\frac{3}{4}$ $9\frac{1}{4}$ $6\frac{1}{2}$	2. $24\frac{3}{4}$ 19 $4\frac{1}{2}$	3. $68\frac{3}{4}$ $5\frac{3}{4}$ $\frac{3}{4}$	4. $15\frac{1}{2}$ $9\frac{1}{4}$ $63\frac{1}{2}$	5. $65\frac{1}{2}$ $9\frac{1}{2}$ 8
6. $35\frac{1}{4}$ $3\frac{1}{2}$ $3\frac{3}{4}$	7. $39\frac{1}{2}$ $5\frac{3}{4}$ $17\frac{1}{2}$	8. $10\frac{1}{2}$ $6\frac{3}{4}$ $9\frac{1}{4}$	9. $47\frac{3}{4}$ $9\frac{3}{4}$ $25\frac{3}{4}$	10. $46\frac{1}{2}$ $8\frac{1}{4}$ $23\frac{1}{4}$
11. $15\frac{1}{2}$ $2\frac{3}{4}$ 35	12. $3\frac{1}{4}$ $62\frac{1}{2}$ $18\frac{3}{4}$	13. $30\frac{1}{2}$ $47\frac{1}{4}$ $5\frac{1}{2}$	14. $68\frac{3}{4}$ 4 $20\frac{1}{2}$	15. $25\frac{1}{4}$ 48 $17\frac{1}{2}$
16. $3\frac{1}{8}$ $64\frac{1}{8}$ $28\frac{1}{8}$	17. $36\frac{1}{2}$ $42\frac{1}{2}$ $15\frac{1}{2}$	18. $60\frac{1}{4}$ $14\frac{1}{4}$ $25\frac{1}{4}$	19. $40\frac{2}{8}$ $13\frac{1}{8}$ 27	20. $64\frac{1}{4}$ 28 $3\frac{3}{4}$

276. Subtract:

21. $30\frac{3}{4}$ $27\frac{1}{2}$	22. $43\frac{3}{4}$ $26\frac{1}{4}$	23. $90\frac{3}{4}$ $85\frac{3}{4}$	24. $86\frac{1}{4}$ 49	25. 80 $37\frac{1}{2}$
26. $85\frac{1}{2}$ $33\frac{1}{4}$	27. $32\frac{2}{8}$ $25\frac{1}{8}$	28. 78 $19\frac{1}{8}$	29. 25 $17\frac{2}{8}$	30. 63 $19\frac{1}{4}$
31. 83 $36\frac{3}{4}$	32. $50\frac{1}{2}$ $37\frac{1}{2}$	33. $98\frac{1}{8}$ $97\frac{1}{8}$	34. $72\frac{2}{8}$ $57\frac{2}{8}$	35. $65\frac{3}{4}$ $29\frac{1}{4}$
36. $48\frac{1}{2}$ $29\frac{1}{4}$	37. $57\frac{3}{4}$ $20\frac{1}{2}$	38. $52\frac{2}{8}$ $39\frac{1}{8}$	39. $34\frac{3}{4}$ $27\frac{1}{4}$	40. $88\frac{1}{2}$ $54\frac{1}{4}$

277. Worcester Public Schools. Examination Questions.

1. What will 3 gallons of milk cost at 5 cents a quart?

2. At a cent an inch, what will a yard of cloth cost?

3. Frank will be 10 years old to-morrow. In what year was he born?

4. $8 \times 9 = ?$ $12 \times 6 = ?$ $7 \times 8 = ?$ $6 \times 11 = ?$ $9 \times 12 = ?$

5. At 5 cents a ride, how many horse-car rides can you take for 75 cents?

6. How much will 72 eggs cost at 20 cents a dozen?

7.

8769	9875
-2424	-6340

8.

11	20
$\times 12$	$+30$
-12	$+25$
$\div 12$	$+75$
$\times 7$	-50
$+2$	-20
$\div 9$	$+60$
$+3$	-40

9. How many feet is it around a square floor that is 12 feet on a side?

10. A newsboy sold enough 2-cent papers to amount to 48 cents. How many dozen papers did he sell?

11. How many tops worth 6 cents each should a boy give for 9 marbles worth 2 cents each?

12. A day is what part of a week?

13. 26 quarts are how much more than 5 gallons?

14. $\frac{1}{3}$ of $27 = ?$ $\frac{1}{5}$ of $45 = ?$ $\frac{4}{6}$ of $18 = ?$ $\frac{3}{7}$ of $28 = ?$ $\frac{2}{3}$ of $18 = ?$

15. $(8 \times 7) + (12 \times 9) + (6 \times 8) = ?$

278. Long Measure.

12 inches = 1 foot.
3 feet = 1 yard.

Inches are written *in.* Feet are written *ft.* Yards are written *yd.*

279. Oral Problems.

1. How many feet are there in 20 yards?

2. At the rate of 30 cents per yard, what will be the cost of 2 feet of ribbon?

3. How many inches are there in $1\frac{3}{4}$ ft.?

4. Change 120 inches to feet.

5. How many feet in 3 yards? How many inches?

6. What part of a foot is 9 inches?

7. Add 1 foot 6 inches to 1 foot 6 inches.

8. 10 yd. 2 ft. are equal to how many feet?

MULTIPLIERS OF TWO DIGITS.

280. Multiply 13 by 13:

Place the numbers as here shown. Multiply first by the units' figure. Then multiply by the tens' figure, placing the first figure of this product under the tens' figure of the multiplier. Then draw a line and add the products.

```
 13
 13
 39
 13
169
```

123	234	406	1234	1456
13	14	21	31	45
369	936	406	1234	7280
123	234	812	3702	5824
1,599	3,276	8,526	38,254	65,520

281. Slate Exercises.

Multiply:

1. 14×13	26. 32×23	51. 123×84	76. 634×68
2. 23×13	27. 24×24	52. 132×85	77. 808×69
3. 61×13	28. 33×26	53. 109×92	78. 910×76
4. 55×13	29. 32×32	54. 111×93	79. $1{,}025 \times 77$
5. 14×14	30. 45×33	55. 104×94	80. $1{,}204 \times 78$
6. 23×14	31. 44×34	56. 105×95	81. $1{,}210 \times 79$
7. 61×14	32. 45×35	57. 215×18	82. $1{,}050 \times 86$
8. 55×14	33. 43×42	58. 230×19	83. $1{,}103 \times 87$
9. 15×21	34. 56×43	59. 306×27	84. $1{,}042 \times 88$
10. 24×21	35. 65×44	60. 407×28	85. $1{,}045 \times 89$
11. 62×21	36. 78×45	61. 523×29	86. $1{,}038 \times 96$
12. 55×21	37. 81×52	62. 614×36	87. $1{,}025 \times 97$
13. 27×32	38. 86×53	63. 309×37	88. $1{,}011 \times 98$
14. 36×41	39. 82×54	64. 410×38	89. $1{,}009 \times 99$
15. 43×51	40. 66×55	65. 531×39	90. $5{,}360 \times 18$
16. 54×15	41. 72×62	66. 630×46	91. $6{,}090 \times 15$
17. 65×61	42. 88×63	67. 234×47	92. $4{,}718 \times 19$
18. 72×17	43. 104×64	68. 345×48	93. $1{,}987 \times 49$
19. 81×71	44. 102×65	69. 450×49	94. $3{,}456 \times 28$
20. 52×18	45. 114×72	70. 560×56	95. $2{,}069 \times 35$
21. 54×14	46. 134×73	71. 102×57	96. $4{,}567 \times 19$
22. 56×15	47. 130×74	72. 206×58	97. $3{,}999 \times 25$
23. 57×16	48. 125×75	73. 312×59	98. $3{,}845 \times 26$
24. 54×17	49. 116×82	74. 416×66	99. $3{,}673 \times 27$
25. 44×22	50. 108×83	75. 523×67	100. $2{,}974 \times 32$

LONG DIVISION.

282. Divide 156 by 13:

In long division, the quotient is placed *over* the dividend. The divisor, 13, is contained in the first two figures of the dividend 1 time. We write 1 in the quotient, and multiply the divisor by it. The product, 13, is placed under the first two figures of the dividend. A line is drawn, 13 is subtracted from 15, and the remainder is written. The next figure, 6, of the dividend is brought down. 13 is contained in 26 2 times. The 2 is written in the quotient. Multiplying, we place the product, 26, under the partial dividend, 26. There being no remainder, the answer is 12.

```
 12 quotient.
13)156
   13
   26
   26
```

```
  21        11        22        203
14)294    15)165    22)484    35)7105
  28        15        44        70
  14        15        44        105
  14        15        44        105
```

Be careful to place each quotient figure over the proper figure of the dividend.

283. Slate Exercises.

Divide:

1.	169 ÷ 13	**15.**	180 ÷ 15	**29.**	4,642 ÷ 22
2.	273 ÷ 13	**16.**	315 ÷ 15	**30.**	2,684 ÷ 22
3.	286 ÷ 13	**17.**	1,815 ÷ 15	**31.**	9,641 ÷ 31
4.	299 ÷ 13	**18.**	1,830 ÷ 15	**32.**	6,603 ÷ 31
5.	1,456 ÷ 13	**19.**	3,015 ÷ 15	**33.**	9,952 ÷ 32
6.	2,743 ÷ 13	**20.**	3,330 ÷ 15	**34.**	7,392 ÷ 32
7.	1,599 ÷ 13	**21.**	231 ÷ 21	**35.**	1,089 ÷ 33
8.	2,886 ÷ 13	**22.**	252 ÷ 21	**36.**	3,729 ÷ 33
9.	154 ÷ 14	**23.**	273 ÷ 21	**37.**	943 ÷ 41
10.	168 ÷ 14	**24.**	483 ÷ 21	**38.**	1,394 ÷ 41
11.	294 ÷ 14	**25.**	651 ÷ 21	**39.**	1,302 ÷ 42
12.	308 ÷ 14	**26.**	2,352 ÷ 21	**40.**	1,428 ÷ 42
13.	1,554 ÷ 14	**27.**	4,473 ÷ 21	**41.**	1,333 ÷ 43
14.	2,968 ÷ 14	**28.**	6,573 ÷ 21	**42.**	1,376 ÷ 43

284. Oral Problems.

1. If three dolls cost 90 cents, what will two dolls cost?

2. Find the cost of $2\frac{1}{4}$ lb. tea at 40 cents per pound.

3. A grocer sold $3\frac{1}{2}$ lb. 6-cent sugar and spent the money for 7 oranges. What did the oranges cost apiece?

4. A store-keeper sold $\frac{1}{2}$ of a pound of candy to one customer, and a quarter of a pound to another. How much did he receive from both, if the candy was worth 40 cents per pound?

5. A man has 3 piles of bricks, each containing 800. How many bricks has he?

6. How many feet have 22 cows?

7. If 20 pounds of meal cost 60 cents, how many pounds can be bought for 36 cents?

8. A farmer sells 43 cows, which are one-half his herd. How many did he have at first?

9. When maple syrup costs 10 cents a half-pint, how much can be bought for 80 cents?

10. At $2 per day, how much will a man earn in 7 weeks of 6 days each?

11. Find the cost of 12 tons of coal at $\$4\frac{1}{2}$ per ton.

12. A man owned $\frac{1}{2}$ of a canal boat. How much did he own after selling $\frac{1}{2}$ of his share?

13. I bought 12 pounds of sugar. How many pounds will I have after using $2\frac{1}{2}$ pounds?

14. Philadelphia is 90 miles from New York. After traveling from New York $\frac{2}{3}$ of the distance, how many more miles has a boy to travel to reach Philadelphia?

15. A lot is 100 feet square. How many feet of fence will be needed to enclose it?

285. Slate Problems.

1. Draw a rectangle to represent a piece of ground 65 feet long, 35 feet wide. How many feet of fence will be required to enclose it?

2. What will be the cost of $11\frac{1}{2}$ yards of cloth at $\$1.80$ per yard?

3. When sheep cost $\$15$ each, how many can be bought for $\$165$?

4. How many inches are there in 25 yards?

5. How many ounces in 30 pounds?

6. Find the total cost of $2\frac{1}{2}$ yards of lace at 16 cents a yard, and 7 yards of ribbon at 8 cents a yard.

7. There are 100 pages in a book. If Lucy reads 14 pages a day, how many pages will there be left for her to read after 6 days?

8. A grocer puts up 48 pounds of tea into $\frac{1}{2}$ pound packages. How many packages are there?

9. How many gallons of oil are there in two cans each containing 12 gallons 2 quarts?

10. Three and one-half pounds of candy are divided among 8 boys. How many ounces does each boy receive?

11. A woman spends $\$18\frac{3}{4}$ Monday, $\$12\frac{1}{2}$ Tuesday, and $\$18\frac{3}{4}$ Wednesday. How much money does she spend in the three days?

12. A farmer had 12 pigs. He sold $\frac{1}{2}$ of them at $\$9$ each, $\frac{1}{3}$ of them at $\$8$ each, and $\frac{1}{6}$ of them at $\$7$ each. How much did he receive?

13. Mr. Jones spent $\frac{1}{2}$ of his money for a horse which cost him $\$175$. How much money did he have left?

14. New York is 90 miles from Philadelphia. After traveling $\frac{5}{6}$ of the distance, how many miles has a girl still to go?

SPECIAL DRILLS.

286. Give sums:

$13+13$	$14+15$	$16+12$	$20+15$	$22+23$
$18+11$	$19+30$	$65+14$	$17+50$	$28+21$
$33+16$	$27+32$	$43+46$	$51+37$	$44+45$
$29+60$	$67+22$	$63+36$	$26+72$	$73+25$

287. Give differences:

$25-13$	$31-20$	$65-11$	$87-75$	$46-26$
$29-11$	$49-30$	$79-14$	$59-27$	$99-63$
$49-33$	$98-73$	$78-31$	$67-50$	$35-15$
$89-60$	$89-46$	$88-51$	$89-44$	$99-62$

288. Give products:

13×2	14×2	21×2	22×2	23×2
31×2	32×2	33×2	34×2	41×2
44×2	13×3	23×3	21×3	22×3
33×3	31×3	32×3	42×2	21×4

289. Give quotients:

$88\div4$	$39\div13$	$26\div2$	$63\div21$	$86\div2$
$64\div32$	$62\div2$	$96\div32$	$42\div2$	$68\div34$
$28\div2$	$66\div33$	$48\div2$	$46\div23$	$66\div2$
$44\div22$	$82\div2$	$90\div30$	$84\div2$	$93\div31$

290. Give results:

$1\frac{1}{2}+\frac{1}{2}$	$1\frac{3}{4}+\frac{1}{4}$	$3\frac{1}{8}+\frac{1}{8}$	$7\frac{1}{2}+\frac{1}{2}$	$2\frac{1}{4}+\frac{1}{4}$
$1\frac{1}{2}+1\frac{1}{2}$	$3\frac{1}{2}+1\frac{1}{4}$	$7\frac{1}{8}+1\frac{2}{8}$	$9\frac{1}{2}+1\frac{1}{2}$	$8\frac{1}{4}+1\frac{3}{4}$
$1\frac{1}{2}+2\frac{1}{2}$	$2\frac{1}{4}+3\frac{1}{2}$	$3\frac{2}{8}+5\frac{1}{8}$	$4\frac{1}{2}+6\frac{1}{2}$	$7\frac{3}{4}+9\frac{1}{4}$
$2\frac{1}{2}+2\frac{1}{2}$	$3\frac{1}{4}+3\frac{1}{2}$	$5\frac{1}{8}+5\frac{2}{8}$	$7\frac{1}{2}+9\frac{1}{2}$	$9\frac{3}{4}+9\frac{1}{4}$

291. Oral Problems.

1. A boy paid $\$1\frac{1}{2}$ for a hat and $\$\frac{1}{2}$ for collars. How much did he spend?

2. Mrs. Smith is 37 years old; her brother is 22 years older. What is his age?

3. If it takes $10\frac{1}{2}$ yards for the skirt of a dress and $3\frac{1}{2}$ yards for the waist, how many yards are needed for the whole dress?

4. There are 300 pounds of sugar in a barrel. After $\frac{1}{2}$ pound is taken out, how many pounds will be left in the barrel?

5. A boy has 65 marbles; he loses 21. How many has he remaining?

6. What will be the total cost of 10 pounds of 6-cent sugar and a pound of 22-cent butter?

7. A woman buys 5 yards of 12-cent muslin and receives 40 cents change. How much did she give the clerk?

8. A man sells a pound of tea for 60 cents and loses 15 cents on it. How much did it cost him?

9. Bought two bars of 20-cent soap and 25 cents' worth of eggs. How much was the bill?

10. If tea costs 80 cents a pound, how much will a pound and three-quarters cost?

11. Paid 10 cents for $\frac{1}{2}$ pound of candy. What would be the cost of 2 lb.?

12. How much would Jane have to pay for 2 dozen oranges at $1\frac{1}{2}$ cents for each orange?

13. A grocer mixed 3 pounds of coffee at 20 cents a pound and 1 pound of coffee at 28 cents. How much were the 4 pounds worth?

14. A girl worked out 93 problems in 3 weeks. How many did she work in one week?

15. A farmer bought 2 cows at $40 each, and paid for them with $20 bills. How many bills did he give?

16. A family uses a quart and a pint of milk a day. How many quarts are used in 6 days?

17. A tea-dealer sold $2\frac{1}{2}$ pounds of tea to one customer and $4\frac{1}{2}$ to another. How much did he sell to both?

18. Paid 66 cents for 3 pounds of candy. What was the price per pound?

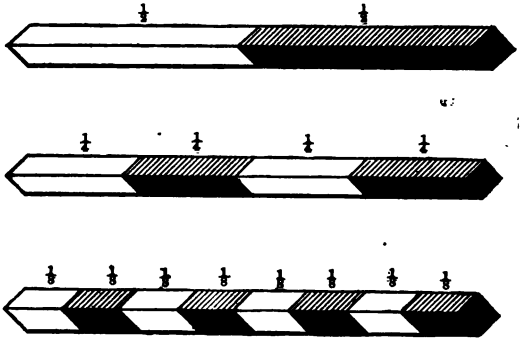
19. Bought $4\frac{1}{2}$ yards of linen one day and $\frac{1}{2}$ of a yard the next day. What was the cost of all at 20 cents per yard?

20. What will be the total cost of 12 oranges at 2 cents each, and 20 pears at 3 cents each?

HALVES, FOURTHS, AND EIGHTHS.

292. Oral Exercises.

When a thing is divided into *two* equal parts, each part is called a *half*, $\frac{1}{2}$.



When a thing is divided into *four* equal parts, each part is called a *fourth*, $\frac{1}{4}$.

When a thing is divided into *eight* equal parts, each part is called an *eighth*, $\frac{1}{8}$.

How many halves in a pie? How many fourths in a pie? How many eighths in a pie?

$1 = \frac{?}{2}$ $1 = \frac{?}{4}$ $1 = \frac{?}{8}$

How many fourths in half a pie? How many eighths in half a pie? How many eighths in one-fourth of a pie?

$\frac{1}{2} = \frac{?}{4}$ $\frac{1}{2} = \frac{?}{8}$ $\frac{1}{4} = \frac{?}{8}$

One-half + one-fourth = how many fourths?

One-half + one-eighth = how many eighths?

One-fourth + one-eighth = how many eighths?

One-fourth + three-eighths = how many eighths?

One-half + three-eighths = how many eighths?

One-fourth + five-eighths = how many eighths?

293. Sight Exercises.

$\frac{1}{2} + \frac{1}{4}$	$\frac{1}{2} + \frac{1}{8}$	$\frac{1}{4} + \frac{1}{8}$
$1\frac{1}{2} + \frac{1}{4}$	$2\frac{1}{2} + \frac{1}{8}$	$3\frac{1}{4} + \frac{1}{8}$
$2\frac{1}{2} + 1\frac{1}{4}$	$3\frac{1}{2} + 1\frac{1}{8}$	$4\frac{1}{4} + 1\frac{1}{8}$
$\frac{1}{4} + \frac{3}{8}$	$\frac{1}{2} + \frac{3}{8}$	$\frac{1}{4} + \frac{5}{8}$
$4\frac{1}{4} + \frac{3}{8}$	$5\frac{1}{2} + \frac{3}{8}$	$6\frac{1}{4} + \frac{5}{8}$
$5\frac{1}{4} + 1\frac{3}{8}$	$6\frac{1}{2} + 1\frac{3}{8}$	$7\frac{1}{4} + 1\frac{5}{8}$

294. Slate Exercises.

Add:

1. $16\frac{1}{2}$	2. $19\frac{1}{2}$	3. $27\frac{1}{4}$	4. $50\frac{1}{4}$	5. $19\frac{1}{2}$
$25\frac{1}{4}$	$43\frac{3}{8}$	$30\frac{3}{8}$	$16\frac{3}{8}$	$62\frac{3}{8}$
6. $8\frac{1}{4}$	7. $73\frac{1}{4}$	8. $14\frac{3}{8}$	9. $56\frac{3}{8}$	10. $26\frac{3}{8}$
$90\frac{5}{8}$	$18\frac{1}{2}$	$85\frac{1}{2}$	$43\frac{1}{4}$	$26\frac{1}{4}$

11. $17\frac{3}{8}$	12. $37\frac{5}{8}$	13. $62\frac{1}{2}$	14. $40\frac{3}{4}$	15. $12\frac{7}{8}$
$25\frac{1}{2}$	$9\frac{1}{4}$	$15\frac{1}{2}$	$5\frac{1}{4}$	$6\frac{1}{8}$
16. $22\frac{5}{8}$	17. $42\frac{1}{4}$	18. $65\frac{3}{8}$	19. $77\frac{1}{2}$	20. $52\frac{1}{8}$
$17\frac{3}{8}$	$30\frac{3}{4}$	$29\frac{5}{8}$	$11\frac{1}{2}$	$27\frac{7}{8}$

295. Find missing numbers:

21. $36\frac{1}{2}$	22. $27\frac{1}{4}$	23. $55\frac{1}{8}$	24. $48\frac{3}{8}$	25. $73\frac{5}{8}$
$+?$	$+?$	$+?$	$+?$	$+?$
40	30	56	49	74
26. ?	27. ?	28. ?	29. ?	30. ?
$+15\frac{7}{8}$	$+27\frac{1}{2}$	$+50\frac{1}{2}$	$+10\frac{1}{2}$	$+19\frac{1}{8}$
16	$30\frac{3}{4}$	$68\frac{3}{4}$	$45\frac{5}{8}$	$72\frac{5}{8}$
31. $6\frac{1}{4}$	32. $80\frac{1}{8}$	33. $18\frac{1}{4}$	34. $21\frac{3}{8}$	35. $19\frac{1}{2}$
$+?$	$+?$	$+?$	$+?$	$+?$
$94\frac{3}{8}$	$87\frac{3}{8}$	$55\frac{5}{8}$	$36\frac{5}{8}$	$40\frac{7}{8}$

296. Subtract:

36. $33\frac{7}{8}$	37. $40\frac{7}{8}$	38. $65\frac{7}{8}$	39. $16\frac{7}{8}$	40. $59\frac{7}{8}$
$6\frac{3}{8}$	$15\frac{1}{4}$	$29\frac{5}{8}$	$8\frac{3}{4}$	$20\frac{1}{8}$
41. $46\frac{3}{8}$	42. $54\frac{5}{8}$	43. $69\frac{7}{8}$	44. $80\frac{1}{8}$	45. $66\frac{3}{8}$
29	17	54	35	$19\frac{3}{8}$
46. 21	47. 17	48. 44	49. 91	50. 35
$20\frac{1}{8}$	$16\frac{3}{8}$	$43\frac{5}{8}$	$90\frac{7}{8}$	$30\frac{1}{8}$

297. Review.

Add:

51. $143.37\frac{1}{2}$, 6.45, .84, 27.19, .09, $707.62\frac{1}{2}$, 3.11, 25.50, 2.43

52. $84.00, 5.95, $.87\frac{1}{2}$, $164.12\frac{1}{2}$, 3.86, 27.95, 483.20, .67, 8.28

53. $386.75, 23.89, 8.86, .47, $66.18\frac{1}{2}$, 234.93, 65.00, 989.37, 5.08

54. $729.84, 67.33, $9.09\frac{1}{2}$, 864., $36.57\frac{1}{2}$, 687.19, 1,000.05, 37.28, $.12\frac{1}{2}$

298. Subtract:

55. $100.00 − 23.89

56. $1,000.00 − .01

57. $684.45 − 26.79

58. $94.16 − 89.99

59. $81.62\frac{1}{2}$ − $5.12\frac{1}{2}$

60. $1.00 − $.12\frac{1}{2}$

299. Multiply:

61. $4.85 × 12

62. $57.14 × 8

63. $36.21 × 27

64. $45.89 × 21

65. $20.14 × 36

66. $2.50 × $12\frac{1}{2}$

300. Divide:

67. 3)$1.86

68. 8)$864.48

69. 2)$74.25

70. 13)$4.42

301. Oral Problems.

1. What will be the cost of 4 pairs of shoes at $3.50 per pair?

2. How much change will a person receive who buys 9 pounds of lard at 11 cents per pound, and gives a $2 bill in payment?

3. A boy buys 2 collars at 12½ cents each, a base-ball for 25 cents, and a 10-cent bat. How much money does he spend?

4. A farmer sells 48 eggs at 25 cents per dozen. How much does he get for them?

5. What is the cost of a 300-pound barrel of sugar, at 4 cents per pound?

6. How many ounces are there in 2 pounds 8 ounces?

7. A grocer sold 3 chests of tea, each weighing 60 lb., at $\$\frac{1}{2}$ per lb. How much did he receive?

8. A steak weighs 2 lb. 7 oz. What is its cost at 16 ¢ per lb.?

9. At 2 oranges for 5 cents, what would be the cost of 2 dozen oranges?

10. How many desks are there in 4 class-rooms, if there are 20 desks in each of 2 of the rooms, and 30 desks in each of the others?

11. Add 5 feet 6 inches and 3 feet 6 inches.

12. How many yards and feet in 40 feet?

13. One-half a yard of serge costs 40 cents. How much must be paid for a yard and an eighth?

14. Find the cost of 3½ lb. coffee, at the rate of 4 pounds for 80 cents.

15. How many ounces are there in 10 pounds?

16. How many 6-cent spools of thread can be bought for $1.80?

17. A grocer sells 3½ lb. of sugar to one customer, 14 lb. to another, and 6½ lb. to a third. How many pounds does he sell in all?

18. What is the cost of 6 pounds of tea, at 40 cents a pound?

19. A dealer mixes a pound of green tea, costing 50 cents a pound, with a pound of black tea, costing 30 cents a pound. How much does each pound of the mixed tea cost him?

20. A farmer receives $800 for 4 horses. For how much apiece does he sell them?

21. A man earns $150 a month. He saves $25 a month. How much does he spend in a month?

302. Slate Problems.

1. I bought 18 pounds of meat at 23 cents a pound. What is the amount of my bill?

2. Find the cost of 6 chairs at $3.75 each.

3. A farmer has 14 apple trees, each yielding 2 bushels of fruit, which he sells for 50 cents a bushel. How much money does he receive for his apples?

4. What profit is made on a pound of nutmegs bought for 75 cents and sold at 6 cents an ounce?

5. A man earns $100 a month, and spends $79 a month. How much does he save in a year?

6. If 2 horses cost $300, what will be the cost of 5 horses?

7. A girl paid 50 cents for 2 yards of ribbon. How many yards could she get for $1.25?

8. How many half-pint jars can be filled from a 6-gallon tub of jelly?

9. How many gallons in 4 dozen bottles each containing a pint and a half?

10. Find the cost of 30 lemons at 30 cents a dozen.

11. What will be paid for 36 cows at $45 each?

12. A man has 13 five-dollar bills, and 15 two-dollar bills. How much money has he?

13. Mr. Hart, with his wife and two children, spends four weeks in the country. He pays six dollars a week for his own board, the same for his wife's board, and $4 a week for the board of each child. How much does he pay in all?

14. If a horse eats one-fourth of a bushel of oats per day, how long will 17 bushels last?

15. When peaches are worth a half-dollar per bushel, how many bushels can be bought for $18?

16. Find the cost, at 16 cents a pound, of two hams, one weighing 8 lb. 8 oz., the other weighing 7 lb. 8 oz.

17. A house is rented for $360 per year. How much rent does the owner receive in 8 months?

18. How many feet have 20 cows, 30 ducks, and 20 flies?

19. If a train goes $7\frac{1}{2}$ miles in a quarter of an hour, how far will it go in 2 hours?

20. If 6 men can do a piece of work in 25 days, how long will it take one man to do it?

303. Slate Exercises.

Divide:

1. 434 by 14	**9.** 693 by 33	**17.** 575 by 25
2. 403 by 13	**10.** 735 by 35	**18.** 775 by 25
3. 360 by 15	**11.** 396 by 36	**19.** 2331 by 21
4. 465 by 15	**12.** 756 by 36	**20.** 2775 by 25
5. 630 by 15	**13.** 451 by 41	**21.** 4173 by 13
6. 345 by 15	**14.** 861 by 41	**22.** 4830 by 15
7. 861 by 21	**15.** 992 by 32	**23.** 4500 by 15
8. 352 by 32	**16.** 656 by 16	**24.** 4531 by 15

207	$306\frac{1}{19}$	$200\frac{11}{27}$	$303\frac{24}{29}$
18)3726	19)5815	27)5411	29)8811
36	57	54	87
126	115	11	111
126	114		87
	1		24

25. 487 ÷ 24	**34.** 3,045 ÷ 15	**43.** 9,069 ÷ 41
26. 856 ÷ 21	**35.** 4,560 ÷ 15	**44.** 6,273 ÷ 51
27. 1,559 ÷ 31	**36.** 4,204 ÷ 21	**45.** 8,125 ÷ 25
28. 5,075 ÷ 25	**37.** 4,256 ÷ 14	**46.** 7,393 ÷ 32
29. 2,828 ÷ 14	**38.** 9,462 ÷ 22	**47.** 5,255 ÷ 52
30. 2,830 ÷ 14	**39.** 6,293 ÷ 31	**48.** 2,416 ÷ 71
31. 2,833 ÷ 14	**40.** 9,060 ÷ 21	**49.** 9,898 ÷ 81
32. 1,515 ÷ 15	**41.** 8,484 ÷ 42	**50.** 9,373 ÷ 91
33. 1,520 ÷ 15	**42.** 7,378 ÷ 61	**51.** 1,866 ÷ 93

304. Oral Problems.

1. If sugar costs 4 cents a pound, what will be the price of 21 pounds?

2. How much change will I receive if I buy 30 pounds of flour at 3 ¢ per lb., and give the grocer a $1 bill?

3. Paid 96 cents for 3 pounds of butter. What is the price per pound?

4. If cider is 40 cents per gallon, how many quarts can I get for 30 cents?

5. What will be the cost of 10 yards of carpet at 85 cents per yard?

6. Paid $2.40 for 20 yards of gingham. What was the price per yard?

7. How many ounces are there in ten pounds and a half?

8. If a man receives $3 per day, how much will he earn in a year, working 300 days?

9. How many lots at six hundred dollars each can be bought for thirty-six hundred dollars?

10. I sold a lot for $600 and lost on it $200. What did it cost me?

305. Blackboard Exercises.

Pupils should be taught to find products without always placing the multiplier under the multiplicand. The following examples in multiplication and division should be worked by writing the answers on the slates directly from the blackboard or the book without writing the other numbers.

MULTIPLICATION.

306. Find the cost of:

1. 196 lb. flour at 4 cents per lb.
2. 3 gal. alcohol at $2.75 per gal.
3. 144 hats at $3 each.
4. 325 lb. sugar at 5 cents per lb.
5. 12 sofas at $45 each.
6. 165 bbl. cement at $2 per bbl.
7. 24 thousand bricks at $6 per thousand.
8. 37 spools thread at 5 cents each.
9. 3 houses, each costing $5,700.
10. 120 bushels wheat at 96 cents per bushel.
11. 11 tierces lard at $6.50 per tierce.
12. 6 hundredweight of straw at 72 cents per hundredweight.
13. 900 bushels oats at 36 cents per bushel.
14. 30 lots at $800 each.
15. 150 yards oilcloth at 30 cents per yard.
16. 20 horses at $175 each.
17. An ox, weighing 1,152 lb., at 4 ¢ per lb.
18. 37 sheep at $4 each.
19. 250 acres land at $40 per acre.
20. 48 yards carpet at $1.20 per yard.
21. 187 packs fire-crackers at 5 ¢ per pack.
22. 39 Roman candles at 20 cents each.
23. 60 overcoats at $37 each.
24. 5 wagons at $175 each.
25. 12 tons hay at $18.75 per ton.

DIVISION.

307. Find the cost of 1 pound, 1 gallon, 1 barrel, 1 spool, 1 thousand, etc.:

26. 96 lb. flour, $2.88.

27. 4 gal. alcohol, $10.40.

28. 72 hats, $144.

29. 31 lb. sugar, $1.24.

30. 16 sofas, $800.

31. 20 bbl. cement, $42.

32. 24 thousand bricks, $120.

33. 48 spools of thread, $1.92.

34. 4 houses, $26,000.

35. 25 bushels of wheat, $25.75.

36. 40 tierces of lard, $250.

37. 11 hundredweight of straw, $7.04.

38. 90 bushels of oats, $33.30.

39. 22 lots, $15,400.

40. 26 yards of oilcloth, $10.40.

41. 25 yards of oilcloth, $10.25.

42. 24 horses, $4,800.

43. 39 sheep, $195.

44. 72 acres of land, $2,160.

45. 75 yards of carpet, $82.50.

46. 36 packs of fire-crackers, $1.44.

47. 25 Roman candles, $5.

48. 30 overcoats, $1,050.

49. 14 wagons, $1,680.

50. 25 tons of hay, $300.

308. Oral Problems.

1. Henry had 40 cents, James had 30 cents, William had 20 cents. How much money in all had the three boys?

2. Mary sold some vegetables for 30 cents and some flowers for 60 cents. If she spent 40 cents for groceries, how much money had she left?

3. If a boy makes 20 cents a day selling morning papers and 10 cents a day selling evening papers, how much does he make in 3 days?

4. A man bought a pound of 50-cent tea, and 2 dozen eggs at 20 cents a dozen. How many dimes will it take to pay for them?

5. A furniture dealer sold a set of parlor furniture for $50 and a bed-room set for $30. If $\frac{1}{4}$ of the cost of both is paid in cash, how much cash does the dealer receive?

6. Francis had 80 cents. After spending 60 cents and earning 50 cents, how much had he?

7. A grocer had 90 pounds of sugar. He sold 50 pounds and used in his family 20 pounds. How much had he then?

8. A girl had 80 cents. She bought a doll for 40 cents and spent the rest for candy at 20 cents per pound. How many pounds did she buy?

9. A farmer has 90 acres of land. Thirty acres are planted in corn. One-third of the remainder is in wheat. How many acres of wheat has he?

10. A coal-dealer had 50 tons of coal. He burned 30 tons and sold the remainder at $4 per ton. How much money did he receive?

11. What will I have to pay for 8 pounds of 5-cent sugar and 50 cents' worth of eggs?

12. What will be the cost of 2 bags of meal, 100 pounds in each bag, at 2 cents per pound?

13. A woman buys 3 pounds of butter at 30 cents a pound. She gives the grocer a 50-cent piece. How much more must she pay?

14. A man sells 4 acres of land at $20 per acre, taking in payment cows worth $40 each. How many cows does he get?

15. What will be the cost of 4 pieces of silk, 20 yards in a piece, at $\$\frac{1}{2}$ per yard?

16. How much will I pay for 40 marbles, at 8 for 1 cent, and a 25-cent ball?

17. Half a dollar is divided among 5 boys. How many 5-cent pieces does each receive?

18. How many 4-pound packages of sugar at 5 cents a pound can I get for 80 cents?

19. A woman pays 80 cents for gingham at 20 cents per yard. She buys one-fourth as many yards of ribbon. How many yards of ribbon does she buy?

20. A man worked 20 days for $80. If he spent $3 per day how much a day did he save?

21. What will I have to pay for $\frac{1}{4}$ lb. of 80-cent tea and a pound of 30-cent coffee?

22. A man owns $\frac{3}{4}$ of a farm of 80 acres. How much has he left after selling 40 acres?

23. If 2 pigs are worth $40, how much are 3 worth?

24. A man had $60. He spent one-half of it for sheep at $3 each. How many sheep did he buy?

25. Two boys divided 50 marbles equally. One of them gave $\frac{1}{5}$ of his share to his sister. How many did she receive?

26. A train goes 40 miles per hour. How long will it take to go 480 miles?

27. How many hours are there from half-past 8 in the forenoon to half-past 1 in the afternoon?

HALVES, FOURTHS, AND EIGHTHS.

309. Oral Exercises.

$\frac{2}{2} = ?$	$\frac{4}{4} = ?$	$\frac{8}{8} = ?$	$\frac{3}{2} = ?$	$\frac{5}{4} = ?$
$\frac{6}{4} = ?$	$\frac{7}{4} = ?$	$\frac{8}{4} = ?$	$\frac{9}{8} = ?$	$\frac{10}{8} = ?$
$\frac{11}{8} = ?$	$\frac{12}{8} = ?$	$\frac{13}{8} = ?$	$\frac{14}{8} = ?$	$\frac{15}{8} = ?$
$\frac{1}{2} + \frac{1}{2}$	$\frac{3}{4} + \frac{1}{4}$	$\frac{1}{8} + \frac{7}{8}$	$\frac{3}{8} + \frac{5}{8}$	$\frac{5}{8} + \frac{5}{8}$
$\frac{3}{8} + \frac{3}{8}$	$\frac{7}{8} + \frac{7}{8}$	$\frac{1}{2} + \frac{5}{8}$	$\frac{1}{4} + \frac{7}{8}$	$\frac{7}{8} + \frac{1}{2}$

310. Slate Exercises.

Add:

1. $19\frac{1}{2}$ $27\frac{1}{2}$	2. $18\frac{3}{4}$ $65\frac{1}{4}$	3. $25\frac{7}{8}$ $6\frac{1}{8}$	4. $30\frac{5}{8}$ $42\frac{3}{8}$	5. $56\frac{1}{2}$ $24\frac{3}{4}$
6. $34\frac{3}{8}$ $34\frac{3}{8}$	7. $27\frac{1}{2}$ $10\frac{5}{8}$	8. $13\frac{1}{2}$ $6\frac{7}{8}$	9. $49\frac{7}{8}$ $20\frac{1}{2}$	10. $71\frac{7}{8}$ $11\frac{1}{4}$
11. $1\frac{1}{8}$ $2\frac{1}{4}$ $3\frac{1}{8}$	12. $5\frac{1}{8}$ $6\frac{1}{8}$ $7\frac{1}{8}$	13. $9\frac{1}{8}$ $10\frac{1}{2}$ $\frac{1}{8}$	14. $4\frac{1}{4}$ $12\frac{1}{2}$ $\frac{1}{4}$	15. $46\frac{1}{8}$ $2\frac{1}{2}$ $1\frac{3}{8}$
16. $12\frac{3}{8}$ $5\frac{1}{4}$ $8\frac{3}{8}$	17. $23\frac{7}{8}$ $6\frac{1}{8}$ $1\frac{1}{8}$	18. $4\frac{3}{8}$ $4\frac{3}{8}$ $4\frac{3}{8}$	19. $3\frac{5}{8}$ $3\frac{5}{8}$ $3\frac{5}{8}$	20. $5\frac{3}{8}$ $7\frac{5}{8}$ $9\frac{7}{8}$

311. Subtract:

21. $10\frac{3}{4}$ $8\frac{1}{2}$	22. $20\frac{3}{8}$ $7\frac{1}{8}$	23. $30\frac{3}{8}$ $9\frac{3}{8}$	24. $40\frac{1}{2}$ $10\frac{1}{4}$	25. $50\frac{3}{4}$ $11\frac{3}{4}$
26. $60\frac{1}{4}$ $59\frac{1}{8}$	27. $60\frac{1}{2}$ $50\frac{1}{8}$	28. $60\frac{1}{2}$ $50\frac{3}{8}$	29. $60\frac{3}{4}$ $50\frac{5}{8}$	30. $60\frac{7}{8}$ $50\frac{7}{8}$
31. $98\frac{7}{8}$ $89\frac{1}{8}$	32. $80\frac{7}{8}$ $60\frac{3}{8}$	33. $65\frac{7}{8}$ $24\frac{5}{8}$	34. $37\frac{5}{8}$ $19\frac{1}{8}$	35. $42\frac{5}{8}$ $16\frac{3}{8}$
36. $56\frac{7}{8}$ $25\frac{1}{2}$	37. $74\frac{7}{8}$ $7\frac{1}{4}$	38. $81\frac{7}{8}$ $62\frac{3}{4}$	39. $59\frac{5}{8}$ $58\frac{1}{2}$	40. $28\frac{5}{8}$ $9\frac{1}{4}$

312. Review. Slate Exercises.

NOTE. — First perform the indicated operations on the quantities between the marks of parenthesis.

41. $43 + 74 + 68$
42. $(85 + 39) - 76$
43. $(25 + 33) \times 3\frac{1}{2}$
44. $(49 + 84) \div 7$
45. $\frac{3}{4}$ of $(68 + 52)$
46. $(40\frac{1}{2} - 25) + 13\frac{1}{2}$
47. $156 - (68\frac{1}{2} + 17\frac{1}{2})$
48. $(384 - 96) \div 72$
49. $\frac{4}{5}$ of $(783 - 248)$
50. $(789 - 65) \times 24$
51. $(65 \times 13) + 155$
52. $(14 \times 16) \times 25$
53. $14 \times (16 \times 25)$
54. $(18 \times 13) - 156$
55. $(42 \times 63) \div 21$
56. $42 \times (84 \div 21)$
57. $(8 \times 24) \times \frac{3}{4}$
58. $(\frac{3}{4} \times 8) \times 24$
59. $8 \times (\frac{3}{4} \times 24)$
60. $(144 \div 24) + 78$
61. $(8{,}820 \div 42) \div 21$
62. $8{,}820 \div (42 \div 21)$
63. $\frac{1}{4}$ of $(840 \div 14)$
64. $(\frac{1}{4}$ of $840) \div 14$
65. $(992 \div 32) - 18$
66. $(\frac{2}{3}$ of $84) + 144$
67. $(\frac{7}{8}$ of $168) - 99$
68. $(376 \div 94) \times 15$
69. $(\frac{4}{5}$ of $640) \div 16$
70. $\frac{1}{4}$ of $(\frac{2}{3}$ of $360)$

313. Slate Problems.

1. A man bought $\frac{1}{4}$ of a flock of 120 sheep for \$150. How much did each sheep cost him?

2. John had 250 postage stamps. He gave away 64 and lost 36. How many had he left?

3. A farmer had 72 cows. How many had he after twenty-five had died, and he had bought 15?

4. If 72 hats cost \$288, how much will 4 hats cost?

5. A grocer sold 15 lb. 8 oz. of tea to one customer and 12 lb. 8 oz. to another. How much tea did he sell to both?

6. A boy had a piece of wire 4 yards long. He cut it up into pieces 1 inch long. How many pieces were there?

7. How much will a druggist receive for 2 gallons of cologne at 80 cents a pint?

8. How many boxes, each containing 8 ounces, will it take to hold 20 pounds of candy?

9. How many inches in 1 yard, 1 foot, 1 inch?

10. A boy had 20 dozen eggs to sell. If he broke $\frac{1}{2}$ dozen on the way to market, how many whole eggs would he have to sell?

11. A dealer bought 10 cows for $500. How much apiece would he have to charge for them to gain $10 on each cow?

12. A girl paid 90 cents for 6 packages of sugar, each containing 3 pounds. How many cents per pound did the sugar cost?

13. At 80 cents a pound, what will 3 ounces of tea cost?

14. A barrel of flour weighs 196 pounds. Find the cost of one-half of it at 3 cents a pound.

15. A newsboy sold 54 papers at 3 cents each. If the papers cost 95 cents, what is his profit?

16. How many 7-pound packages can be made from $\frac{1}{4}$ of a barrel of flour, if there are 196 pounds of flour in a barrel?

17. What will be the total cost of $\frac{1}{4}$ bbl. of flour at $6 per bbl. and 2 pounds of tea at 75 ¢ per lb.

18. A ton of hay weighs 2,000 pounds. If a man buys $\frac{1}{2}$ ton, how many pounds will he have left after using 250 pounds?

19. Five dozen collars are sold for $9.00. What is the price of one collar?

20. At 32 cents per pound, how much will be paid for 1 pound 7 ounces of butter?

21. What will $\frac{1}{8}$ of a yard of silk cost at the rate of $25.60 for 16 yards?

22. A bag of coffee weighing 80 pounds is put into 20 packages. If it is sold for $1.20 per package, what is the price per pound?

23. Four pieces of calico, each containing 30 yards, are used in making 24 waists. How many yards does it take to make a waist?

24. There are 24 pounds 8 ounces in a bag of flour. How many pounds in 8 bags?

25. 3 yards 1 foot of wire are cut up into 6-inch pieces. How many pieces are there?

MULTIPLIERS ENDING WITH CIPHERS.

314. Oral Exercises.

$100 \times 3 = ?$	$100 \times 6 = ?$	$100 \times 10 = ?$
$100 \times 7 = ?$	$100 \times 9 = ?$	$100 \times 11 = ?$

315. Sight Exercises.

Give answers:

15×100	27×100	35×100	43×100
56×100	69×100	74×100	87×100
99×100	100×100	101×100	109×100
234×100	345×100	456×100	567×100
678×100	789×100	890×100	901×100
$16 \times 1{,}000$	$29 \times 1{,}000$	$33 \times 1{,}000$	$45 \times 1{,}000$
$92 \times 1{,}000$	$68 \times 1{,}000$	$76 \times 1{,}000$	$84 \times 1{,}000$
14×200	23×200	13×300	21×400
42×200	33×300	22×400	44×200

316. Slate Exercises.

1. 236×300	4. 69×700	7. $76 \times 1{,}300$
2. 178×400	5. 87×900	8. $65 \times 1{,}400$
3. 134×500	6. $82 \times 1{,}200$	9. $24 \times 3{,}000$

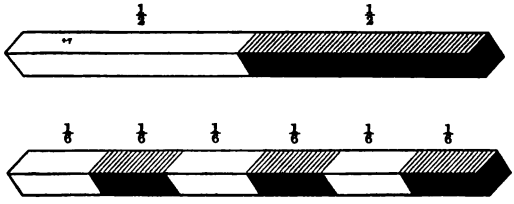
10. $45 \times 2{,}000$	15. $38 \times 2{,}500$	20. $42 \times 1{,}600$
11. $37 \times 2{,}400$	16. $43 \times 1{,}800$	21. 187×510
12. 187×450	17. $27 \times 3{,}100$	22. 158×630
13. $98 \times 1{,}000$	18. $33 \times 2{,}700$	23. 97×840
14. $4 \times 20{,}000$	19. $62 \times 1{,}500$	24. 112×790

HALVES, THIRDS, AND SIXTHS.

317. Oral Exercises.

When a thing is divided into *two* equal parts, what is each part called?

What is each part called when a thing is divided into *six* equal parts?



Which is greater, one-half or one-sixth? How many sixths of a pie are there in half a pie?

One-sixth of a foot is how many inches? One-half of a foot is how many inches? How many sixths of a foot are there in one-half of a foot? $\frac{1}{2} = \frac{?}{6}$?

One-half + one-sixth = how many sixths?
One-half + two-sixths = how many sixths?
One-half + three-sixths = how many sixths?
One-half + four-sixths = how many sixths?
One-half + five-sixths = how many sixths?

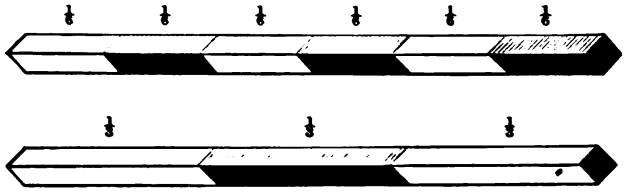
One-third = how many sixths?

Two-thirds = how many sixths?

One-half = how many sixths?

Two-sixths = how many thirds?

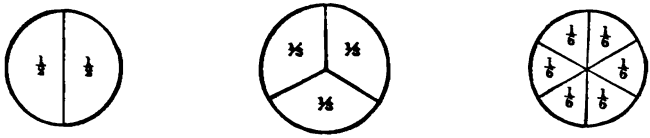
Three-sixths = what? Four-sixths = what?



One-half + one-sixth = how many thirds?

One-half + one-third = how many sixths?

One-third + one-sixth = what?



318. Sight Exercises.

Give answers:

$\frac{1}{2}$	$4\frac{1}{2}$	$\frac{1}{3}$	$5\frac{1}{3}$	$\frac{5}{6}$	$4\frac{5}{6}$
$+\frac{1}{6}$	$+\frac{1}{6}$	$+\frac{1}{6}$	$+\frac{1}{6}$	$+\frac{1}{2}$	$+\frac{1}{2}$
$\frac{1}{2}$	$4\frac{1}{2}$	$\frac{1}{3}$	$5\frac{1}{3}$	$\frac{5}{6}$	$4\frac{5}{6}$
$-\frac{1}{6}$	$-\frac{1}{6}$	$-\frac{1}{6}$	$-\frac{1}{6}$	$-\frac{1}{2}$	$-\frac{1}{2}$
$3\frac{2}{3}$	$6\frac{2}{3}$	$\frac{5}{6}$	$8\frac{5}{6}$	$\frac{5}{6}$	$1\frac{5}{6}$
$+\frac{1}{6}$	$-\frac{1}{6}$	$+\frac{1}{3}$	$-\frac{1}{3}$	$+\frac{2}{3}$	$-\frac{2}{3}$

319. Slate Exercises.

Add:

1. $4\frac{1}{2}$	2. $5\frac{1}{3}$	3. $6\frac{1}{2}$	4. $10\frac{5}{6}$	5. $12\frac{5}{6}$
$3\frac{1}{6}$	$4\frac{1}{6}$	$9\frac{5}{6}$	$8\frac{1}{2}$	$7\frac{1}{3}$
6. $13\frac{1}{3}$	7. $18\frac{5}{6}$	8. $30\frac{1}{6}$	9. $20\frac{3}{4}$	10. $29\frac{2}{3}$
$5\frac{5}{6}$	$29\frac{1}{6}$	$6\frac{5}{6}$	$2\frac{1}{3}$	$16\frac{1}{6}$
11. $63\frac{5}{6}$	12. $18\frac{5}{6}$	13. $6\frac{1}{2}$	14. $20\frac{1}{3}$	15. $41\frac{2}{3}$
$20\frac{2}{3}$	$70\frac{2}{3}$	$5\frac{1}{3}$	$19\frac{1}{2}$	$6\frac{1}{2}$
16. $1\frac{1}{2}$	17. $5\frac{1}{2}$	18. $4\frac{1}{2}$	19. $10\frac{1}{6}$	20. $20\frac{1}{6}$
$2\frac{1}{3}$	$7\frac{2}{3}$	$6\frac{1}{3}$	$10\frac{1}{6}$	$3\frac{5}{6}$
$3\frac{1}{6}$	$9\frac{1}{6}$	$8\frac{5}{6}$	$10\frac{1}{6}$	$12\frac{1}{2}$
21. $18\frac{1}{3}$	22. $15\frac{1}{6}$	23. $5\frac{1}{6}$	24. $2\frac{1}{2}$	25. $90\frac{5}{6}$
$9\frac{1}{6}$	$10\frac{1}{3}$	$4\frac{1}{2}$	$\frac{1}{2}$	$3\frac{5}{6}$
$8\frac{1}{6}$	$\frac{1}{3}$	$3\frac{1}{6}$	$1\frac{1}{6}$	$2\frac{5}{6}$
26. $10\frac{1}{4}$	27. $23\frac{1}{8}$	28. $8\frac{1}{4}$	29. $6\frac{1}{8}$	30. $49\frac{1}{2}$
$5\frac{1}{2}$	$17\frac{3}{8}$	$10\frac{7}{8}$	$15\frac{1}{2}$	$22\frac{5}{8}$
$\frac{1}{8}$	$50\frac{5}{8}$	$12\frac{1}{2}$	$21\frac{3}{8}$	$16\frac{1}{4}$

320. Subtract:

31. $14\frac{1}{2}$	32. $24\frac{1}{3}$	33. $16\frac{5}{6}$	34. $28\frac{5}{6}$	35. $12\frac{5}{6}$
$5\frac{1}{6}$	$3\frac{1}{6}$	$9\frac{1}{2}$	$6\frac{1}{3}$	$7\frac{1}{6}$
36. $15\frac{1}{2}$	37. $20\frac{1}{3}$	38. $31\frac{5}{6}$	39. $42\frac{5}{6}$	40. $57\frac{5}{6}$
$4\frac{1}{6}$	$5\frac{1}{6}$	$17\frac{1}{2}$	$26\frac{1}{3}$	$40\frac{1}{6}$
41. 20	42. 30	43. 40	44. 50	45. $60\frac{1}{2}$
$\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{5}{6}$	$2\frac{5}{6}$	$10\frac{1}{3}$
46. 27	47. 38	48. 49	49. 54	50. 87
$18\frac{1}{2}$	$9\frac{1}{3}$	$27\frac{1}{4}$	$46\frac{1}{6}$	$86\frac{1}{3}$

LONG DIVISION DRILLS.

321. Give quotients at sight. Omit remainders when there are any.

160 ÷ 20	360 ÷ 60	450 ÷ 90	300 ÷ 50	270 ÷ 30
240 ÷ 30	490 ÷ 70	560 ÷ 80	360 ÷ 40	200 ÷ 40
280 ÷ 40	720 ÷ 80	350 ÷ 70	210 ÷ 30	350 ÷ 50
450 ÷ 50	360 ÷ 90	540 ÷ 60	180 ÷ 20	420 ÷ 60
160 ÷ 19	360 ÷ 59	450 ÷ 89	300 ÷ 49	270 ÷ 29
240 ÷ 29	490 ÷ 69	560 ÷ 79	360 ÷ 39	200 ÷ 39
280 ÷ 39	720 ÷ 79	350 ÷ 69	210 ÷ 29	350 ÷ 49
450 ÷ 49	360 ÷ 89	540 ÷ 59	180 ÷ 19	420 ÷ 59
160 ÷ 21	360 ÷ 61	450 ÷ 91	300 ÷ 51	270 ÷ 31
240 ÷ 31	490 ÷ 71	560 ÷ 81	360 ÷ 41	200 ÷ 41
280 ÷ 41	720 ÷ 81	350 ÷ 71	210 ÷ 31	350 ÷ 51
450 ÷ 51	360 ÷ 91	540 ÷ 61	180 ÷ 21	420 ÷ 61
449 ÷ 90	251 ÷ 49	149 ÷ 21	324 ÷ 62	546 ÷ 88
641 ÷ 80	242 ÷ 39	269 ÷ 31	583 ÷ 72	721 ÷ 78
559 ÷ 70	271 ÷ 29	364 ÷ 41	672 ÷ 82	351 ÷ 68
359 ÷ 60	143 ÷ 19	368 ÷ 51	846 ÷ 92	482 ÷ 58
301 ÷ 43	192 ÷ 24	585 ÷ 65	819 ÷ 86	423 ÷ 47
231 ÷ 33	270 ÷ 34	748 ÷ 75	325 ÷ 76	296 ÷ 37
184 ÷ 23	351 ÷ 44	757 ÷ 85	396 ÷ 66	243 ÷ 27
90 ÷ 13	432 ÷ 54	628 ÷ 95	392 ÷ 56	130 ÷ 17

322. Slate Exercises.

Divide:

1. $756 \div 14$
2. $810 \div 15$
3. $864 \div 16$
4. $918 \div 17$
5. $968 \div 22$
6. $736 \div 23$
7. $576 \div 24$
8. $858 \div 26$
9. $1{,}024 \div 32$
10. $1{,}485 \div 33$
11. $1{,}536 \div 34$
12. $1{,}575 \div 35$
13. $1{,}806 \div 42$
14. $2{,}408 \div 43$
15. $2{,}860 \div 44$
16. $3{,}510 \div 45$
17. $4{,}212 \div 52$
18. $4{,}558 \div 53$
19. $4{,}428 \div 54$
20. $3{,}630 \div 55$
21. $4{,}464 \div 62$
22. $5{,}544 \div 63$
23. $7{,}872 \div 64$
24. $8{,}970 \div 65$
25. $5{,}544 \div 72$
26. $9{,}709 \div 73$
27. $2{,}738 \div 74$
28. $5{,}775 \div 75$
29. $9{,}430 \div 82$
30. $8{,}051 \div 83$
31. $7{,}212 \div 84$
32. $8{,}262 \div 85$
33. $8{,}464 \div 92$
34. $6{,}055 \div 93$
35. $6{,}392 \div 94$
36. $9{,}025 \div 95$
37. $2{,}717 \div 19$
38. $9{,}738 \div 18$
39. $8{,}856 \div 27$
40. $6{,}048 \div 28$
41. $8{,}816 \div 29$
42. $9{,}756 \div 36$
43. $2{,}738 \div 37$
44. $5{,}434 \div 38$
45. $8{,}034 \div 39$
46. $8{,}464 \div 46$
47. $6{,}392 \div 47$
48. $5{,}184 \div 48$
49. $9{,}996 \div 49$
50. $9{,}072 \div 56$
51. $8{,}151 \div 57$
52. $8{,}816 \div 58$
53. $4{,}956 \div 59$
54. $9{,}450 \div 66$
55. $8{,}241 \div 67$
56. $9{,}216 \div 68$
57. $6{,}624 \div 69$
58. $9{,}234 \div 76$
59. $9{,}702 \div 77$
60. $8{,}034 \div 78$
61. $8{,}611 \div 79$
62. $9{,}632 \div 86$
63. $9{,}309 \div 87$
64. $8{,}580 \div 88$
65. $7{,}941 \div 89$
66. $5{,}184 \div 96$
67. $9{,}409 \div 97$
68. $9{,}996 \div 98$
69. $9{,}108 \div 99$
70. $9{,}450 \div 27$
71. $8{,}356 \div 36$
72. $4{,}880 \div 45$
73. $9{,}428 \div 54$
74. $8{,}763 \div 63$
75. $9{,}804 \div 72$
76. $9{,}716 \div 81$
77. $8{,}429 \div 64$
78. $4{,}832 \div 56$
79. $5{,}784 \div 48$
80. $6{,}609 \div 32$
81. $8{,}515 \div 28$
82. $7{,}218 \div 35$
83. $9{,}843 \div 42$
84. $8{,}764 \div 49$
85. $7{,}349 \div 63$
86. $6{,}528 \div 54$
87. $9{,}609 \div 24$
88. $8{,}735 \div 16$
89. $9{,}999 \div 18$
90. $8{,}875 \div 25$
91. $5{,}005 \div 55$
92. $9{,}230 \div 65$
93. $8{,}475 \div 75$
94. $9{,}600 \div 85$
95. $8{,}325 \div 95$
96. $4{,}984 \div 96$
97. $9{,}518 \div 92$
98. $9{,}030 \div 88$
99. $8{,}000 \div 77$

when there

270 ÷ 30
300 ÷ 40
350 ÷ 50
420 ÷ 60

270 ÷ 29
300 ÷ 39
350 ÷ 49
420 ÷ 59

270 ÷ 31
300 ÷ 41
350 ÷ 51
420 ÷ 61

546 ÷ 88
721 ÷ 78
351 ÷ 68
482 ÷ 58

322. Slate Exercises.

Divide:

1. $756 \div 14$
2. $810 \div 15$
3. $864 \div 16$
4. $918 \div 17$
5. $968 \div 22$
6. $736 \div 23$
7. $576 \div 24$
8. $858 \div 26$
9. $1{,}024 \div 32$
10. $1{,}485 \div 33$
11. $1{,}536 \div 34$
12. $1{,}575 \div 35$
13. $1{,}806 \div 42$
14. $2{,}408 \div 43$
15. $2{,}860 \div 44$
16. $3{,}510 \div 45$
17. $4{,}212 \div 52$
18. $4{,}558 \div 53$
19. $4{,}428 \div 54$
20. $3{,}630 \div 55$
21. $4{,}464 \div 62$
22. $5{,}544 \div 6\square$
23. $7{,}872 \div 6\square$
24. $8{,}970 - \square$
25. $5{,}544 - \square$
26. $9{,}7\square - \square$
27. $2{,}7\square - \square$
28. $5{,}\square$
29. 9
30. 8
31. 7
32. 8

34. $6{,}055 \div 93$
35. $6{,}392 \div 94$
36. $9{,}025 \div 95$
37. $2{,}717 \div 19$
38. $9{,}738 \div 18$
39. $8{,}856 \div 27$
40. $6{,}048 \div 28$
41. $8{,}816 \div 29$
42. $9{,}756 - \square$
43. $2{,}73\square - \square$
44. $5{,}4\square - \square$
45. $5{,}\square\square$
46. $\square\square$
47. $\square$
48. $\square$

67. $9{,}409 \div \square$
68. $9{,}9\square - \square$
69. $\square - \square$
70. $\square - \square$
71. $\square$
72. $\square$
73. $\square$
74. $\square$

200

200

,300

$\square - 9$

of 30) + 16

$\square$ 72?

How many 9's?

ny 12's in 77?

$\square$ 20

DIVISORS ENDING WITH CIPHERS.

323. Oral Exercises.

Divide:

900 by 100	1,000 by 10	1,100 by 100	1,200 by 100
$16 \times 100 = ?$	$1{,}600 \div 100 = ?$	$25 \times 100 = ?$	$2{,}500 \div 100 = ?$

How do we multiply a number by 100? How can we divide by 100 a number that ends with two ciphers?

324. Sight Exercises.

Give answers:

$2{,}800 \div 100$	$9{,}000 \div 100$	$7{,}200 \div 100$	$12{,}900 \div 100$
$3{,}600 \div 100$	$5{,}900 \div 100$	$8{,}700 \div 100$	$18{,}700 \div 100$
$4{,}500 \div 100$	$6{,}100 \div 100$	$13{,}500 \div 100$	$20{,}000 \div 100$

$2{,}800 \div 200$	$1{,}200 \div 600$	$66{,}000 \div 11{,}000$
$3{,}600 \div 300$	$2{,}100 \div 700$	$39{,}000 \div 13{,}000$
$3{,}200 \div 400$	$4{,}000 \div 800$	$48{,}000 \div 12{,}000$
$2{,}500 \div 500$	$6{,}300 \div 900$	$28{,}000 \div 14{,}000$

325. Slate Exercises.

Divide 87,600 by 600.

$6\text{Ø}\text{Ø})\underline{87\text{6}\text{Ø}\text{Ø}}$ Strike out the same number of ciphers in divisor and dividend.

146 quotient.

1. $40{,}800 \div 300$	**5.** $78{,}300 \div 900$	**9.** $60{,}000 \div 2{,}400$
2. $12{,}800 \div 400$	**6.** $90{,}000 \div 1{,}200$	**10.** $98{,}000 \div 2{,}000$
3. $17{,}000 \div 500$	**7.** $72{,}000 \div 3{,}000$	**11.** $87{,}000 \div 1{,}000$
4. $85{,}400 \div 700$	**8.** $91{,}000 \div 1{,}400$	**12.** $80{,}000 \div 20{,}000$

326. Sight Exercises.

Give answers:

1. $806 \div 100$	6. $2{,}856 \div 700$	11. $2{,}817 \div 1{,}400$
2. $806 \div 200$	7. $3{,}025 \div 500$	12. $7{,}709 \div 1{,}100$
3. $806 \div 400$	8. $4{,}050 \div 800$	13. $4{,}235 \div 2{,}100$
4. $2{,}036 \div 400$	9. $3{,}675 \div 600$	14. $6{,}005 \div 1{,}200$
5. $1{,}896 \div 300$	10. $2{,}719 \div 900$	15. $9{,}393 \div 3{,}100$

327. $9{,}637 \div 300$

$3\not{0}\not{0})96\not{3}\not{7}$

$32\frac{37}{300}$

$8{,}975 \div 200$

$2\not{0}\not{0})89\not{7}\not{5}$

$44\frac{175}{200}$

$19{,}575 \div 1{,}600$

$16\not{0}\not{0})19\not{5}\not{7}\not{5}$ $\quad 12\frac{875}{1600}$

16

35

32

3

328. Slate Exercises.

1. $40{,}890 \div 300$	6. $72{,}194 \div 800$
2. $37{,}295 \div 400$	7. $83{,}416 \div 900$
3. $59{,}532 \div 500$	8. $88{,}635 \div 1{,}100$
4. $64{,}380 \div 600$	9. $98{,}320 \div 1{,}200$
5. $62{,}700 \div 700$	10. $11{,}002 \div 1{,}300$

329. Philadelphia Public Schools. — Oral Work.

1. $6 + 7 + 9 + 8 + 15$	3. $49 + 7 - 9$
2. $24 - 9 + 8 + 12 - 20$	4. $(\frac{2}{3}$ of $30) + 16$
5. 12 times 7	9. How many 8's in 72?
6. 7 times 9	10. In 56 are how many 9's?
7. 3 times 25	11. How many 12's in 77?
8. $7 \times ? = 63$	12. $(48 \div 12) \times 20$

13. How many quarts are in 2 bushels?

1 bushel = 32 quarts.

14. In 16 pints are how many gallons?

15. 4 pecks and 2 quarts = quarts?

1 peck = 8 quarts.

16. $\frac{1}{2}$ of a yard = inches?

17. 72 buttons = dozen?

18. 3 pounds = ounces?

19. Show the pupils a bucket and ask them to tell (approximately) how many gallons it could hold.

20. If 3 pounds of soap cost 30 cents, how much do 8 pounds cost?

330. Written Work.

1. Write in figures — nine hundred eighteen, six thousand twelve, seven hundred six, eight thousand fifty.

2. From 4,132 take 349.

3. Add 48; 765; 56; 3,067; 84; 4,567.

4. Multiply 96 by 78.

5. Divide 3,020 by 9.

6. A lot of ground cost $750, and the house built on it cost three times as much. What did both cost?

7. If a drover pays $3,675 for forty-nine horses, how much would fifty horses cost at the same rate?

8. A boy skated in a circle that was 20 feet across, and about three times as far around. About how many feet would he skate in going twice around the circle and twice across it? Draw a diagram to explain your work.

331. Massachusetts Civil Service Examination. — Draw-Tender of Bridges.

1. Write in figures the following number:

One thousand five hundred sixty-three dollars and fourteen cents.

2. Write in words the number expressed by the following figures:

14,368.

3. Add the following column of figures:

792
3,467
1,823
119
427
2,336

4. From 21,315 take 19,678.

5. Divide 4,968 by 23.

6. Multiply 726 by 54.

332. Prison Service.

1. Write in figures the following numbers:

Two thousand seven hundred forty-two.

Six hundred seventy dollars and three cents.

2. Write in words the numbers expressed by the following figures:

3,742

$693.51

3. Add the following column of figures:

375
2,146
1,989
2,432
867
1,233

4. From 27,321 subtract 18,465.

5. Divide 1,554 by 42.

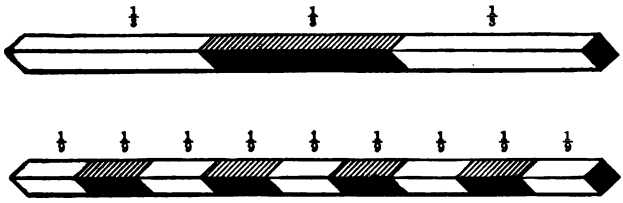
6. Multiply 305 by 46.

7. If a man works twenty-six days at two dollars and twenty-five cents per day, how much money will he earn?

THIRDS AND NINTHS.

333. Oral Exercises.

When a thing is divided into *nine* equal parts, each part is called a *ninth*.



One-third of a yard contains how many inches? How many inches in one-ninth of a yard? One-third = how many ninths? Two-thirds = how many ninths? One-third and one-ninth = how many ninths?

One-third + one-ninth = how many ninths?
One-third + two-ninths = how many ninths?
One-third + four-ninths = how many ninths?
One-third + five-ninths = how many ninths?
One-third + seven-ninths = how many ninths?
One-third + eight-ninths = how many ninths?

2 thirds + 1 ninth = how many 9ths?
2 thirds + 2 ninths = how many 9ths?
2 thirds + 4 ninths = how many 9ths?
2 thirds + 5 ninths = how many 9ths?
2 thirds + 7 ninths = how many 9ths?
2 thirds + 8 ninths = how many 9ths?

$\frac{3}{9} = \frac{?}{3}$ $\frac{6}{9} = \frac{?}{3}$ $\frac{10}{9} = 1\frac{?}{9}$ $\frac{11}{9} = 1\frac{?}{9}$ $\frac{18}{9} = 1\frac{?}{9}$

$\frac{14}{9} = ?$ $\frac{16}{9} = ?$ $\frac{17}{9} = ?$ $\frac{12}{9} = ?$ $\frac{18}{9} = ?$

334. Slate Exercises.

Add:

1. $18\frac{1}{9}$	2. $27\frac{2}{9}$	3. $16\frac{1}{9}$	4. $33\frac{1}{3}$	5. $66\frac{2}{3}$
$9\frac{4}{9}$	$20\frac{5}{9}$	$35\frac{7}{9}$	$5\frac{1}{9}$	$\frac{1}{9}$
6. $42\frac{1}{3}$	7. $63\frac{1}{3}$	8. $75\frac{1}{3}$	9. $87\frac{2}{3}$	10. $54\frac{1}{9}$
$57\frac{2}{9}$	$5\frac{4}{9}$	$19\frac{5}{9}$	$8\frac{2}{9}$	$30\frac{8}{9}$
11. $95\frac{2}{9}$	12. $5\frac{4}{9}$	13. $37\frac{1}{3}$	14. $14\frac{1}{3}$	15. $25\frac{2}{3}$
$37\frac{7}{9}$	$17\frac{5}{9}$	$67\frac{7}{9}$	$55\frac{8}{9}$	$1\frac{4}{9}$
16. $37\frac{1}{2}$	17. $49\frac{2}{3}$	18. $87\frac{1}{6}$	19. $53\frac{2}{3}$	20. $8\frac{2}{3}$
$5\frac{1}{6}$	$4\frac{1}{3}$	$11\frac{1}{3}$	$29\frac{5}{9}$	$26\frac{7}{9}$
21. $1\frac{1}{9}$	22. $6\frac{2}{9}$	23. $13\frac{4}{9}$	24. $6\frac{2}{9}$	25. $10\frac{4}{9}$
$2\frac{2}{9}$	$5\frac{4}{9}$	$87\frac{7}{9}$	$21\frac{7}{9}$	$10\frac{4}{9}$
$3\frac{4}{9}$	$11\frac{5}{9}$	$\frac{5}{9}$	$3\frac{8}{9}$	$10\frac{4}{9}$
26. $2\frac{1}{2}$	27. $1\frac{1}{2}$	28. $7\frac{1}{3}$	29. $10\frac{1}{3}$	30. $17\frac{1}{3}$
$4\frac{1}{4}$	$3\frac{1}{3}$	$9\frac{1}{3}$	$5\frac{4}{9}$	$20\frac{5}{9}$
$6\frac{1}{8}$	$5\frac{1}{6}$	$11\frac{2}{9}$	$\frac{2}{3}$	$15\frac{1}{3}$

335. Subtract:

31. $6\frac{8}{9}$	32. $30\frac{7}{9}$	33. $27\frac{5}{9}$	34. $93\frac{4}{9}$	35. $77\frac{7}{9}$
$3\frac{5}{9}$	$4\frac{1}{3}$	$6\frac{1}{3}$	$89\frac{1}{3}$	$33\frac{1}{3}$
36. $77\frac{7}{9}$	37. 10	38. 20	39. 30	40. 40
$66\frac{2}{3}$	$1\frac{1}{9}$	$3\frac{1}{3}$	$5\frac{2}{9}$	$7\frac{1}{4}$
41. 50	42. 60	43. 70	44. 80	45. 90
$9\frac{1}{3}$	$11\frac{4}{9}$	$13\frac{1}{2}$	$15\frac{5}{9}$	$17\frac{7}{9}$
46. 99	47. $27\frac{1}{2}$	48. $32\frac{1}{2}$	49. $33\frac{1}{3}$	50. $87\frac{7}{8}$
$19\frac{8}{9}$	$\frac{1}{6}$	$15\frac{1}{3}$	$4\frac{1}{6}$	$25\frac{1}{4}$

SPECIAL DRILLS.

336. Give sums:

$30+80$	$300+600$	$130+60$	$275+10$	$70+60$
$20+90$	$500+400$	$240+30$	$183+9$	$80+90$
$80+70$	$200+700$	$370+20$	$672+8$	$60+50$
$90+50$	$400+300$	$410+80$	$477+7$	$90+70$

337. Give differences:

$150-90$	$900-600$	$190-130$	$285-10$	$100-30$
$160-70$	$800-300$	$270-40$	$192-183$	$170-80$
$140-60$	$700-400$	$390-360$	$670-8$	$130-60$
$120-50$	$600-200$	$450-20$	$484-477$	$110-20$

338. Give products:

30×8	200×4	60×7	$90\times\frac{2}{3}$	111×5
20×9	300×3	80×2	$80\times\frac{3}{4}$	222×4
40×4	400×2	90×5	$60\times\frac{2}{3}$	333×3
70×3	200×3	50×6	$70\times\frac{6}{7}$	444×2

339. Give quotients:

$240\div8$	$240\div30$	$800\div400$	$800\div2$	$666\div111$
$180\div9$	$180\div20$	$900\div300$	$900\div3$	$999\div3$
$160\div4$	$160\div40$	$800\div200$	$800\div4$	$888\div222$
$210\div3$	$210\div70$	$600\div300$	$600\div2$	$777\div7$

340. Give results:

$\frac{1}{2}+\frac{1}{6}$	$\frac{1}{2}-\frac{1}{6}$	$60\times1\frac{1}{2}$	$1\div\frac{1}{2}$	$\frac{4}{5}$ of 50
$\frac{1}{2}+\frac{1}{4}$	$\frac{1}{2}-\frac{1}{4}$	$60\times1\frac{1}{3}$	$2\div\frac{1}{2}$	$\frac{7}{8}$ of 80
$\frac{1}{3}+\frac{1}{6}$	$\frac{1}{3}-\frac{1}{6}$	$60\times1\frac{1}{5}$	$3\div\frac{1}{2}$	$\frac{2}{3}$ of 90
$\frac{1}{3}+\frac{1}{9}$	$\frac{1}{3}-\frac{1}{9}$	$60\times1\frac{1}{6}$	$4\div\frac{1}{2}$	$\frac{3}{4}$ of 80

MULTIPLIERS OF MORE THAN TWO FIGURES.

341. Multiply 249 by 397.

First multiply by 7, placing the first figure of the product under the 7 of the multiplier. Then multiply by 9, placing the first figure of the product under the 9 of the multiplier. Next, multiply by 3, placing the first figure of the product under the 3 of the multiplier. Draw a line, and add.

```
 249
 397
1743
2241
 747
98853
```

342. Multiply:

1. 426 by 234
2. 697 by 123
3. 347 by 276
4. 702 by 135
5. 615 by 153
6. 383 by 234
7. 723 by 134
8. 806 by 119
9. 809 by 123
10. 519 by 176
11. 352 by 246
12. 495 by 196
13. 634 by 148
14. 536 by 148
15. 824 by 111
16. 379 by 254
17. 695 by 136
18. 354 by 267
19. 726 by 125
20. 724 by 129
21. 815 by 118
22. 276 by 333
23. 271 by 329
24. 568 by 154
25. 808 by 121
26. 241 by 398

343. Divide:

27. 8,643 by 201
28. 7,956 by 102
29. 9,696 by 303
30. 9,720 by 405
31. 7,056 by 504
32. 7,891 by 607
33. 9,884 by 706
34. 9,684 by 807
35. 9,988 by 908
36. 8,199 by 911

37. 6,496 by 812
38. 9,269 by 713
39. 9,210 by 614
40. 6,708 by 516
41. 9,960 by 415
42. 7,291 by 317
43. 9,810 by 218
44. 9,225 by 123
45. 7,326 by 222
46. 7,326 by 333
47. 9,872 by 1,234
48. 9,380 by 2,345
49. 8,142 by 1,357
50. 9,872 by 2,468

344. Multiply 456 by 209.

Place, as before, the first (units') figure of the product by 9 under the 9 of the multiplier, and the first figure of the product by 2 under the 2 of the multiplier.

```
 456
 209
4104
912
95304
```

345. Multiply:

NOTE. — Either number may be taken as the multiplier.

51. 635 by 108
52. 903 by 107
53. 959 by 101
54. 691 by 140
55. 772 by 120
56. 827 by 103
57. 271 by 306
58. 314 by 206
59. 724 by 105
60. 808 by 121
61. 128 by 709
62. 671 by 105
63. 483 by 203
64. 704 by 123
65. 401 by 245
66. 351 by 204
67. 907 by 110
68. 499 by 198
69. 68 by 1,203
70. 47 by 2,023
71. 2,005 by 49
72. 49 by 2,005
73. 131 by 706
74. 368 by 204

346. Find products:

75. $64 \times 1\frac{3}{8}$
76. $42 \times 2\frac{1}{2}$
77. $27 \times 3\frac{2}{3}$
78. $56 \times 1\frac{3}{4}$
79. $24 \times 2\frac{7}{8}$
80. $18 \times 3\frac{5}{6}$
81. $32 \times 5\frac{1}{4}$
82. $40 \times 2\frac{3}{5}$
83. $21 \times 4\frac{2}{7}$
84. $27 \times 3\frac{4}{9}$
85. $36 \times 5\frac{1}{6}$
86. $35 \times 4\frac{2}{5}$
87. $64 \times 3\frac{5}{8}$
88. $48 \times 7\frac{3}{8}$
89. $45 \times 6\frac{3}{5}$
90. $8 \times 12\frac{1}{2}$
91. $9 \times 11\frac{1}{3}$
92. $20 \times 10\frac{1}{4}$
93. $20 \times 12\frac{3}{4}$
94. $30 \times 10\frac{2}{3}$
95. $40 \times 11\frac{2}{5}$
96. $50 \times 13\frac{1}{2}$
97. $60 \times 14\frac{2}{3}$
98. $40 \times 15\frac{3}{8}$

CHAPTER V.

MULTIPLIERS AND DIVISORS OF THREE OR MORE FIGURES. — ADDITION AND SUBTRACTION OF EASY FRACTIONS. — MULTIPLICATION BY A MIXED NUMBER. — EASY DENOMINATE NUMBERS.

MULTIPLICATION.

347. Multiply 48 by $26\frac{3}{4}$.

48
$26\frac{3}{4}$
4)144
36
288
96
1284

To multiply by $\frac{3}{4}$, we can find one-fourth, and multiply the result by 3.

$\frac{1}{4}$ of 48 is 12 $\frac{3}{4}$ of $48 = 12 \times 3 = 36$

It will generally be found better to multiply first and then to divide.

$48 \times 3 = 144$ $\frac{1}{4}$ of $144 = 36$

The units' figure of the product by 6 is placed under the 6. The first figure of the product by 2 is placed under the 2.

126	248	375
$84\frac{2}{3}$	$130\frac{7}{8}$	$206\frac{3}{4}$
3)252	8)1736	4)1125
84	217	$281\frac{1}{4}$
504	744	2250
1008	248	750
10,668	32,457	$77,531\frac{1}{4}$

348. Multiply:

1. $27 \times 13\frac{1}{3}$
2. $36 \times 31\frac{1}{4}$
3. $48 \times 16\frac{2}{3}$
4. $32 \times 37\frac{1}{2}$
5. $75 \times 23\frac{3}{5}$
6. $64 \times 43\frac{3}{4}$
7. $126 \times 18\frac{1}{2}$
8. $252 \times 63\frac{2}{3}$
9. $328 \times 45\frac{3}{8}$
10. $468 \times 83\frac{5}{6}$
11. $295 \times 75\frac{2}{5}$
12. $154 \times 28\frac{4}{7}$

13. $198 \times 33\frac{3}{8}$
14. $540 \times 44\frac{3}{10}$
15. $770 \times 56\frac{1}{11}$
16. $720 \times 68\frac{5}{12}$
17. $1{,}236 \times 14\frac{1}{2}$
18. $2{,}484 \times 24\frac{3}{4}$
19. $1{,}278 \times 66\frac{2}{3}$
20. $1{,}456 \times 56\frac{7}{8}$
21. $336 \times 20\frac{1}{2}$
22. $448 \times 30\frac{1}{4}$
23. $972 \times 40\frac{2}{3}$
24. $1{,}024 \times 50\frac{3}{4}$
25. $240 \times 60\frac{7}{8}$
26. $360 \times 70\frac{2}{3}$
27. $630 \times 80\frac{4}{5}$
28. $720 \times 90\frac{5}{8}$
29. $840 \times 100\frac{3}{10}$
30. $960 \times 100\frac{7}{12}$
31. $660 \times 120\frac{3}{11}$
32. $234 \times 130\frac{1}{2}$
33. $176 \times 240\frac{3}{4}$
34. $324 \times 330\frac{1}{3}$
35. $235 \times 410\frac{2}{5}$
36. $576 \times 160\frac{3}{8}$
37. $25 \times 13\frac{1}{2}$
38. $47 \times 14\frac{1}{3}$
39. $49 \times 25\frac{1}{4}$
40. $51 \times 37\frac{1}{5}$
41. $50 \times 33\frac{2}{3}$
42. $69 \times 41\frac{3}{4}$
43. $76 \times 24\frac{3}{5}$
44. $85 \times 53\frac{5}{6}$
45. $127 \times 49\frac{1}{2}$
46. $253 \times 84\frac{3}{4}$
47. $987 \times 40\frac{2}{3}$
48. $876 \times 50\frac{4}{5}$
49. $1{,}370 \times 30\frac{6}{7}$
50. $620 \times 160\frac{7}{9}$
51. $250 \times 260\frac{2}{3}$

LONG DIVISION.

349. Slate Exercises.

52. $88{,}851 \div 21$
53. $97{,}712 \div 31$
54. $98{,}605 \div 41$
55. $81{,}600 \div 51$
56. $99{,}003 \div 61$
57. $99{,}755 \div 71$
58. $99{,}954 \div 81$
59. $94{,}185 \div 91$
60. $73{,}760 \div 32$
61. $87{,}978 \div 43$
62. $89{,}262 \div 54$
63. $91{,}520 \div 65$
64. $99{,}180 \div 76$
65. $92{,}220 \div 87$
66. $98{,}294 \div 98$
67. $94{,}685 \div 29$
68. $91{,}607 \div 101$
69. $87{,}963 \div 109$
70. $98{,}172 \div 202$
71. $98{,}475 \div 303$
72. $99{,}788 \div 404$
73. $95{,}445 \div 505$
74. $93{,}930 \div 606$
75. $97{,}566 \div 707$
76. $99{,}384 \div 808$
77. $99{,}081 \div 909$
78. $86{,}478 \div 213$
79. $99{,}792 \div 324$
80. $88{,}305 \div 435$
81. $92{,}820 \div 546$
82. $95{,}922 \div 657$
83. $94{,}464 \div 768$
84. $90{,}195 \div 859$
85. $99{,}944 \div 961$
86. $98{,}196 \div 1{,}002$
87. $96{,}048 \div 2{,}001$
88. $99{,}096 \div 3{,}002$
89. $96{,}072 \div 4{,}003$
90. $95{,}076 \div 5{,}004$
91. $96{,}080 \div 6{,}005$
92. $98{,}084 \div 7{,}006$
93. $96{,}084 \div 8{,}007$
94. $99{,}088 \div 9{,}008$
95. $98{,}196 \div 1{,}002$
96. $95{,}961 \div 1{,}103$
97. $92{,}550 \div 1{,}234$
98. $77{,}385 \div 2{,}345$
99. $79{,}488 \div 3{,}456$
100. $91{,}827 \div 10{,}203$
101. $81{,}216 \div 20{,}304$
102. $98{,}760 \div 12{,}345$

SPECIAL DRILLS.

350. Give sums:

$56+17$	$48+19$	$67+17$	$76+15$	$59+17$
$13+78$	$18+42$	$14+36$	$18+56$	$18+45$
$25+16$	$65+15$	$26+16$	$48+12$	$34+19$
$18+25$	$14+18$	$13+29$	$29+15$	$18+27$

351. Give differences:

$66-19$	$41-25$	$80-65$	$67-19$	$42-29$
$56-39$	$90-19$	$50-14$	$60-48$	$32-14$
$60-12$	$67-48$	$94-76$	$41-16$	$91-78$
$66-47$	$80-15$	$60-18$	$84-67$	$94-18$

352. Give products:

13×4	5×15	14×6	8×81	18×4
19×5	4×19	31×7	7×14	16×5
24×4	5×17	90×8	6×16	15×6
15×3	4×23	14×3	5×18	13×7

353. Give quotients:

$42\div3$	$42\div14$	$279\div31$	$92\div23$	$60\div4$
$91\div7$	$78\div13$	$427\div61$	$78\div26$	$98\div7$
$56\div4$	$75\div15$	$205\div41$	$56\div28$	$70\div5$
$90\div6$	$90\div18$	$568\div71$	$81\div27$	$48\div3$

354. Give remainders:

$4-3\frac{1}{4}$	$20-19\frac{3}{4}$	$8\frac{1}{2}-5\frac{1}{4}$	$17\frac{1}{2}-13\frac{1}{4}$	$16\frac{3}{4}-3\frac{1}{2}$
$25\frac{3}{4}-5\frac{1}{4}$	$80-\frac{1}{4}$	$60-\frac{1}{2}$	$40-\frac{3}{4}$	$80-1\frac{1}{4}$
$60-1\frac{1}{2}$	$40-1\frac{3}{4}$	$40-2\frac{3}{4}$	$40-3\frac{3}{4}$	$40-10\frac{3}{4}$
$4\frac{1}{2}-1\frac{1}{8}$	$6\frac{1}{2}-1\frac{3}{8}$	$7\frac{1}{8}-1\frac{1}{9}$	$8\frac{1}{8}-1\frac{1}{6}$	$9\frac{5}{6}-1\frac{3}{8}$

355. Oral Problems.

1. If 3 yd. cambric cost 63 cents, what will be the cost of 4 yd.?

2. How much will I have to pay for 12 pounds of 6-cent sugar and a 15-cent bar of soap?

3. How many quarts of milk in 24 gallons?

4. A piece of cloth measures 45 feet. How many yards does it contain?

5. At 5 cents per ounce, what will be the cost of a pound of cinnamon?

6. Bought 6 pounds of 6-cent sugar. How much change from a half-dollar?

7. Gave five dollars in payment for 9 yd. silk, at 60 cents a yard. How much do I still owe?

8. If $\frac{1}{2}$ lb. of candy costs 10 cents, how much must I pay for 4 lb.?

9. Gave $\frac{1}{3}$ of a pie to John, and $\frac{1}{6}$ to Daniel. How much of the pie remained?

10. I divided 3 apples into quarters. How many pieces did I make?

11. What will be the total cost of three 50-cent balls and five 10-cent bats?

12. A conductor charges 84 cents fare for a ride of 28 miles. What is the rate per mile?

13. How many feet have 15 hens and 10 dogs?

14. Paid 15 cents for a quart of syrup. What is the price per gallon?

15. How much is received for a bushel of potatoes sold @ 15¢ per $\frac{1}{2}$ peck? (1 bushel = 4 pecks.)

16. I paid 21 cents for sugar, 15 cents for coffee, and 30 cents for tea. How much did I pay for all?

17. What will be the cost of 4 pounds of cheese, at 18 cents per pound?

18. When eggs are selling for 30 cents per dozen, how many eggs can be bought for 90 cents?

19. If a bushel of wheat weighs 60 pounds, how many bushels are there in 540 pounds of wheat?

20. A dealer paid $96 for 16 sheep. What was the price of one sheep?

21. A boy had 35 postage stamps, and bought 16 more. How many had he then?

22. Find the cost of 36 two-cent stamps.

23. When muslin is 5 cents a yard, how many yards can be bought for 80 cents?

24. A store-keeper sold from a 10-pound box of candy $\frac{1}{2}$ lb. to one customer, and $\frac{3}{4}$ lb. to another. How much candy remained?

25. A boy pays 15 cents for 3 quarters of a pie. What is the cost of 1 quarter? How much does the whole pie cost?

356. Slate Problems.

1. Paid $5.25 for 3 yards of silk. What will be the cost of 4 yards?

2. I bought 27 lb. of 6-ct. sugar, and 8 bars of soap at 15¢ per bar. What is my bill?

3. How many pints of milk in 24 gallons?

4. A piece of cloth measures 720 inches. How many yards does it contain?

5. At 3 cents per ounce, what would be the cost of 5 pounds of pepper?

6. Bought 16 pounds of 60-cent tea. How much change do I get from a $10 bill?

7. Gave $25 in payment for 16 yards of silk, at $1¼ per yard. How much do I still owe?

8. If ½ yard of cloth costs 75 cents, what is the cost of 1½ yards?

9. A piece of linen measures 12¼ yards. How much will be left after selling 5½ yards and 4¼ yards?

10. How many quarters in $27?

11. What will be the cost of 4 coats at $15 each, and 5 hats at $2.50 each?

12. Two towns are 150 miles apart. If the fare is $4.50, what is the rate per mile?

13. How many feet have 17 hens and 13 dogs?

14. Paid 15 cents for a quart of molasses. What would be the cost, at the same rate, of 13 gallons?

15. How much is received for a barrel of potatoes, containing 3 bushels, sold at the rate of 10 cents per half-peck?

16. Find the cost of 7½ lb. of sugar at 6 cents per pound, 1¼ lb. coffee at 28¢ per pound, and ¼ lb. of 60-cent tea.

17. How much must be paid for 24¾ yd. of muslin at 4 cents per yard?

18. When eggs are worth 25 cents per dozen, how many eggs can be bought for $1? For $3?

19. A bushel of corn weighs 56 pounds. How many bushels are there in a load weighing 2,240 pounds?

20. A farmer pays $1,500 for 25 cows. What is the price of a cow?

21. A boy had 276 butterflies after 137 had been destroyed. How many had he at first?

22. Find the total cost of 18 one-cent stamps, 13 two-cent stamps, 10 three-cent stamps, and 5 five-cent stamps.

23. When muslin is 5 cents a yard, how many yards can be bought for $\$6\frac{1}{2}$?

24. From a farm of 100 acres, $75\frac{3}{4}$ acres and $16\frac{1}{2}$ acres were sold. How many acres remain?

25. I paid \$5.25 for 3 quarters of a yard of velvet. What was the cost of 1 quarter of a yard?

MULTIPLICATION.

357. Slate Exercises.

Use either number as a multiplier.

1. $3{,}976 \times 23$	**18.** $126 \times 4\frac{1}{2}$	**35.** 105×589
2. $3{,}456 \times 25$	**19.** $162 \times 5\frac{1}{8}$	**36.** 166×597
3. $2{,}879 \times 34$	**20.** $168 \times 6\frac{2}{3}$	**37.** 158×612
4. $2{,}508 \times 36$	**21.** $105 \times 7\frac{2}{5}$	**38.** 149×624
5. $1{,}987 \times 45$	**22.** $108 \times 8\frac{3}{4}$	**39.** 137×723
6. $1{,}893 \times 47$	**23.** $120 \times 9\frac{1}{6}$	**40.** 127×735
7. $1{,}593 \times 56$	**24.** $136 \times 9\frac{7}{8}$	**41.** 116×834
8. $1{,}427 \times 58$	**25.** $48 \times 10\frac{1}{8}$	**42.** 105×846
9. $1{,}488 \times 67$	**26.** $72 \times 20\frac{1}{5}$	**43.** 103×967
10. $1{,}060 \times 69$	**27.** 768×125	**44.** 101×985
11. $1{,}059 \times 78$	**28.** 779×128	**45.** $64 \times 31\frac{1}{4}$
12. $1{,}190 \times 84$	**29.** 367×264	**46.** $63 \times 44\frac{4}{9}$
13. $1{,}097 \times 89$	**30.** 388×256	**47.** $128 \times 187\frac{1}{2}$
14. $1{,}036 \times 93$	**31.** 218×356	**48.** $112 \times 218\frac{3}{4}$
15. $96 \times 1\frac{7}{8}$	**32.** 306×325	**49.** $297 \times 333\frac{1}{3}$
16. $80 \times 2\frac{9}{10}$	**33.** 209×478	**50.** $144 \times 666\frac{2}{3}$
17. $108 \times 3\frac{2}{9}$	**34.** 207×463	**51.** $108 \times 750\frac{1}{4}$

MIXED NUMBERS.

358. Review. Sight Exercises.

1. $4\frac{3}{4} - 4\frac{1}{2}$	2. $3\frac{3}{4} + 5\frac{1}{8}$	3. $4\frac{1}{2} + 2\frac{3}{8}$	4. $7\frac{1}{2} + \frac{1}{6}$	5. $8\frac{5}{6} - 5\frac{1}{3}$
6. $3\frac{1}{3} + 4\frac{5}{9}$	7. $7\frac{3}{4} - 5\frac{5}{8}$	8. $3\frac{7}{8} - 3\frac{1}{2}$	9. $7\frac{3}{8} + 5\frac{2}{3}$	10. $4\frac{5}{8} - 3\frac{1}{2}$
11. $1\frac{2}{3} + 3\frac{1}{3}$	12. $7\frac{1}{2} + 2\frac{1}{2}$	13. $5\frac{3}{4} + 6\frac{1}{4}$	14. $3\frac{7}{8} + 7\frac{1}{8}$	15. $2\frac{3}{8} + 9\frac{5}{8}$
16. $6\frac{1}{6} + 3\frac{5}{6}$	17. $4\frac{2}{9} + 4\frac{7}{9}$	18. $9\frac{4}{9} + 1\frac{5}{9}$	19. $3\frac{1}{3} + 6\frac{2}{3}$	20. $10 - 1\frac{1}{2}$
21. $5 - 3\frac{1}{4}$	22. $8 - 4\frac{3}{4}$	23. $7 - 2\frac{1}{3}$	24. $9 - 4\frac{2}{3}$	25. $1 - \frac{1}{6}$
26. $3 - 2\frac{5}{6}$	27. $6 - 3\frac{1}{8}$	28. $12 - 11\frac{3}{8}$	29. $2 - \frac{5}{8}$	30. $4 - 1\frac{7}{8}$
31. $5 - 1\frac{1}{9}$	32. $7 - 2\frac{2}{3}$	33. $9 - 3\frac{4}{9}$	34. $6 - 4\frac{5}{8}$	35. $8 - 5\frac{7}{9}$
36. $3 - 1\frac{8}{9}$	37. $27 + 3\frac{3}{4}$	38. $6\frac{1}{3} + 5\frac{1}{6}$	39. $3\frac{5}{8} + 1\frac{1}{2}$	40. $7\frac{3}{8} + 1\frac{5}{9}$

359. Slate Exercises.

Add:

1. $56\frac{3}{4}$ $72\frac{1}{2}$	2. $83\frac{3}{4}$ $9\frac{1}{8}$	3. $64\frac{1}{2}$ $15\frac{3}{8}$	4. $87\frac{1}{2}$ $10\frac{1}{6}$	5. $65\frac{1}{3}$ $3\frac{5}{6}$
6. $13\frac{1}{3}$ $14\frac{5}{9}$	7. $37\frac{3}{4}$ $9\frac{5}{8}$	8. $95\frac{1}{2}$ $3\frac{7}{8}$	9. $67\frac{2}{3}$ $15\frac{2}{9}$	10. $44\frac{5}{8}$ $63\frac{1}{2}$
11. $57\frac{3}{4}$ $5\frac{3}{8}$ $1\frac{1}{2}$	12. $75\frac{1}{4}$ $6\frac{1}{8}$ $9\frac{5}{8}$	13. $\frac{1}{2}$ $29\frac{1}{3}$ $65\frac{1}{6}$	14. $23\frac{1}{3}$ $8\frac{1}{9}$ $6\frac{1}{3}$	15. $6\frac{2}{3}$ $15\frac{2}{3}$ $3\frac{2}{3}$

16. $75\frac{3}{4}$	**17.** $72\frac{1}{8}$	**18.** $26\frac{1}{2}$	**19.** $50\frac{1}{9}$	**20.** $3\frac{1}{6}$
$9\frac{3}{4}$	$5\frac{3}{8}$	$3\frac{2}{3}$	$6\frac{1}{9}$	$21\frac{1}{6}$
$\frac{1}{2}$	$3\frac{5}{8}$	$18\frac{5}{6}$	$27\frac{1}{9}$	$63\frac{1}{6}$

360. Subtract:

21. $70\frac{1}{4}$	**22.** $37\frac{1}{2}$	**23.** $45\frac{3}{4}$	**24.** 59	**25.** $63\frac{3}{4}$
$6\frac{1}{8}$	$9\frac{3}{8}$	$8\frac{5}{8}$	$23\frac{7}{8}$	$9\frac{1}{2}$
26. $77\frac{3}{4}$	**27.** $59\frac{3}{4}$	**28.** $90\frac{1}{2}$	**29.** 65	**30.** $80\frac{1}{3}$
$8\frac{3}{8}$	$29\frac{1}{8}$	$9\frac{1}{8}$	$64\frac{7}{8}$	$5\frac{1}{6}$
31. $27\frac{1}{8}$	**32.** $16\frac{3}{8}$	**33.** 37	**34.** 79	**35.** 23
$19\frac{1}{9}$	$10\frac{1}{6}$	$18\frac{1}{2}$	$35\frac{1}{8}$	$10\frac{1}{4}$
36. 15	**37.** 44	**38.** 96	**39.** 56	**40.** 82
$3\frac{1}{6}$	$19\frac{1}{8}$	$77\frac{1}{9}$	$28\frac{2}{9}$	$41\frac{7}{9}$

361. **Slate Exercises.**

Divide:

1. 60,000 ÷ 21	**17.** 18,589 ÷ 102	**33.** 20,998 ÷ 813
2. 97,168 ÷ 31	**18.** 89,629 ÷ 207	**34.** 36,533 ÷ 912
3. 50,239 ÷ 41	**19.** 46,187 ÷ 301	**35.** 30,308 ÷ 1,009
4. 82,767 ÷ 51	**20.** 35,168 ÷ 408	**36.** 76,536 ÷ 2,008
5. 60,396 ÷ 61	**21.** 91,074 ÷ 503	**37.** 15,630 ÷ 3,007
6. 38,268 ÷ 71	**22.** 68,615 ÷ 604	**38.** 51,238 ÷ 4,006
7. 57,831 ÷ 81	**23.** 73,490 ÷ 705	**39.** 98,592 ÷ 5,005
8. 25,691 ÷ 91	**24.** 90,296 ÷ 809	**40.** 86,833 ÷ 6,004
9. 54,004 ÷ 33	**25.** 63,630 ÷ 906	**41.** 17,584 ÷ 7,003
10. 49,165 ÷ 25	**26.** 79,412 ÷ 112	**42.** 56,773 ÷ 8,002
11. 42,177 ÷ 52	**27.** 48,000 ÷ 219	**43.** 35,445 ÷ 9,001
12. 33,868 ÷ 43	**28.** 42,057 ÷ 318	**44.** 21,506 ÷ 1,234
13. 35,409 ÷ 74	**29.** 17,691 ÷ 417	**45.** 39,706 ÷ 13,235
14. 13,776 ÷ 62	**30.** 94,337 ÷ 516	**46.** 92,698 ÷ 23,174
15. 25,692 ÷ 92	**31.** 96,693 ÷ 615	**47.** 71,028 ÷ 11,838
16. 60,512 ÷ 85	**32.** 35,361 ÷ 714	**48.** 48,615 ÷ 16,205

362. Oral Problems.

1. A woman paid 46 cents for 2 yards of dress material. How many yards could she buy for 69 cents?

2. A girl had $\frac{1}{2}$ yard of ribbon. After using $\frac{1}{8}$ yard for a bow, how much had she left?

3. How many inches in $\frac{5}{6}$ yd.?

4. Find the cost of 2 lb. coffee at 20 cents per pound and $\frac{3}{4}$ lb. of 80-cent tea.

5. If the cost of two-thirds of a yard of silk is 60 cents, what is the cost of one-third of a yard?

6. How much must be paid for 1 yard, 1 foot, and 1 inch of wire at 1 cent an inch?

7. When candy is worth 40 cents a pound, how much can be bought for 60 cents?

8. A grocer puts up a pound and a half of tea into quarter-pound packages. How many packages are there?

9. How many pints are there in $\frac{7}{8}$ of a gallon?

10. Out of a flock of 75 sheep, 58 were sold. How many remain?

11. A girl gave a half-dollar in payment for a 15-cent doll. How much change did she receive?

12. When syrup costs 48 cents a gallon, find the total cost of a gallon, a quart, and a pint.

13. How many days will $10\frac{1}{2}$ pounds of butter last if $\frac{1}{2}$ pound is used each day?

14. How many gallons in 360 quarts?

15. How many pounds and ounces of tea will remain in a 10-pound package after 3 pounds 5 ounces have been sold?

363. Dry Measure.

8 quarts (qt.)	1 peck (pk.)
4 pecks	1 bushel (bu.)

16. How many quarts in $\frac{1}{2}$ bushel?

17. How many bushels in 64 quarts?

18. How many pecks are there in a barrel containing $2\frac{1}{2}$ bushels?

19. At 5 cents per quart, what would be the cost of a bushel of chestnuts?

20. How many cents in $\frac{4}{5}$ of a dollar?

21. What will be the cost of a half dozen oranges at the rate of 2 oranges for 3 cents?

22. When butter is worth 16 cents a half pound, how much should be paid for 11 ounces?

23. If 3 pounds of sugar cost 18 cents, how many pounds can be bought for 72 cents?

24. Five men can do a piece of work in 15 days. How long would it take one man to do the same work?

25. When muslin costs 8 cents a yard, what part of a yard can be bought for 2 cents? For 4 cents? 6 cents? 7 cents?

364. Slate Problems.

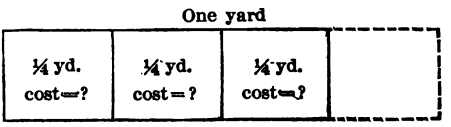
1. A barrel of flour contains 196 pounds. How many barrels can be filled from 6,076 pounds of flour?

2. From a piece of cloth containing $45\frac{7}{8}$ yards there are sold $14\frac{1}{8}$, $13\frac{1}{4}$, and $12\frac{1}{2}$ yards. How many yards remain?

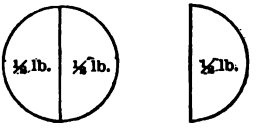
3. How many inches are there in $10\frac{5}{9}$ yards?

4. A woman spends a dollar for $6\frac{1}{2}$ yards of calico at 8 cents a yard, and some ribbon at 32 cents a yard. How much ribbon did she buy?

5. A storekeeper charges 75 cents for 3 quarters of a yard of silk. How much does he charge for each quarter of a yard? What is the price per yard?



6. A grocer sells a pound print of butter and a half of a pound print for 48 cents. How much does the half-pound print cost?



7. Find the amount paid for 1 yard, 1 foot, 1 inch of ribbon at 72 cents per yard.

8. When candy is worth 20 cents a half pound, how much can be bought for $1.40?

9. How many pints are there in $4\frac{7}{8}$ gallons?

10. Seventy-five sheep remain in a flock after 29 are killed and 41 are sold. How many sheep were in the flock?

11. A girl gave a $5-bill in payment for four 75-cent dolls. How much change did she receive?

12. When milk costs 24 cents a gallon, find the cost of 3 gallons, 3 quarts, and 1 pint.

13. How many weeks will 21 pounds of butter last if $\frac{1}{2}$ pound is used each day?

14. How many gallons in 280 pints?

15. From a 40-pound box of tea 29 lb. 11 oz. have been sold. How many pounds and ounces remain?

16. How much does a grocer receive for a barrel of potatoes containing $2\frac{1}{2}$ bushels, which he sells for 5¢ a quarter of a peck?

17. Find the weight of 1 bu. 1 pk. 1 qt. of oats that weigh 32 pounds to the bushel.

18. What will be the cost of 240 pounds of wheat at 90 cents per bushel of 60 pounds?

19. Fifteen men finish a piece of work in 10 days. How long would it take 1 man? How long would it take 50 men?

20. Chestnuts are bought at $1.15 a bushel. How much is gained on a bushel by selling them at 10 cents a quart?

21. A farmer raised 57¾ bushels of wheat. He used 10¼ bushels for flour and kept 8½ bushels for seed. How much did he receive for the remainder at $1 per bushel?

22. Find the cost of 12 overcoats at $18.75 each.

23. I paid $54 for 2 dozen hats. What did the hats cost apiece?

24. A tub of butter weighs, with the tub, 42¾ lb. The tub weighs 8½ lb. How much is the butter worth at 24 cents per lb.?

25. Find the loss on 12 cows bought for $700 and sold at $55 each.

NOTATION AND NUMERATION.

365. Write in figures:

One hundred thousand. Two hundred thousand. Three hundred thousand. Four hundred thousand. Five hundred thousand. Six hundred thousand. Seven hundred thousand. Eight hundred thousand. Nine hundred thousand.

366. Read the following:

1. 100,000	4. 405,600	7. 756,400
2. 200,350	5. 550,000	8. 864,370
3. 304,000	6. 675,000	9. 999,999

367. Write in figures:

1. Eight thousand, three hundred twenty-five.
2. Eighty-eight thousand, three hundred twenty-five.
3. Eight hundred eighty-eight thousand, three hundred twenty-five.
4. Six hundred seven thousand, four hundred eleven.
5. Eight hundred sixty thousand, eighty-six.
6. Seven hundred nine.
7. Four hundred twenty thousand, nineteen.
8. Thirty-five thousand, six hundred one.
9. Two hundred thousand, five.
10. Five hundred eleven thousand, eighty.

368. Write in Roman numerals:

1. One hundred eighty.
2. Two hundred fifty-nine.
3. Three hundred seventeen.
4. One hundred ninety-nine.
5. Two hundred sixty-four.
6. Ninety-nine.

369. Read the following:

260,371	162,039	131,130	514,151	281,001
40,252	67,226	52,321	40,008	63,070
300,200	310,016	270,303	259,000	468,800
468,800	120,645	242,598	101,200	434,759
108,991	8,271	60,570	56,005	252,010
514,868	50,250	105,709	39,100	9,009
100,001	202,020	83,006	8,675	20,036
156,017	721,809	500,746	171,118	4,226
448,315	174,004	314,159	400,756	12,831
610,030	75	18,908	804	6,060
CCCIX	CLXXIV	XCVIII	LXXVII	CXLIX

370. Slate Exercises.

Add across. Add down.

1 +	2 +	3 +	4 +	5 = ?
20 +	30 +	40 +	50 +	60 = ?
300 +	400 +	500 +	600 +	700 = ?
4,000 +	5,000 +	6,000 +	7,000 +	8,000 = ?
50,000 +	60,000 +	70,000 +	80,000 +	90,000 = ?
100,000 +	200,000 +	100,000 +	200,000 +	100,000 = ?
? +	? +	? +	? +	? = ?

371. Add down. Subtract across.

9 −	6 = ?	8 −	3 = ?
80 −	50 = ?	70 −	20 = ?
700 −	400 = ?	600 −	400 = ?
6,000 −	3,000 = ?	9,000 −	5,000 = ?
50,000 −	20,000 = ?	50,000 −	10,000 = ?
400,000 −	100,000 = ?	600,000 −	300,000 = ?
? −	? = ?	? −	? = ?

372. Multiply across. Add multiplicands and products.

$7 \times 5 = ?$	$2 \times 8 = ?$	$2 \times 10 = ?$	$1 \times 12 = ?$
$5 \times 5 = ?$	$10 \times 8 = ?$	$10 \times 10 = ?$	$10 \times 12 = ?$
$? \times 5 = ?$	$? \times 8 = ?$	$? \times 10 = ?$	$? \times 12 = ?$

$1 \times 5 = ?$	$3 \times 6 = ?$	$3 \times 12 = ?$	$5 \times 20 = ?$
$10 \times 5 = ?$	$20 \times 6 = ?$	$10 \times 12 = ?$	$20 \times 20 = ?$
$100 \times 5 = ?$	$100 \times 6 = ?$	$100 \times 12 = ?$	$300 \times 20 = ?$
$? \times 5 = ?$	$? \times 6 = ?$	$? \times 12 = ?$	$? \times 20 = ?$

373. Review.

Add:

1.	2.	3.	4.
260,371	161,003	131,130	400,756
40,252	39,062	52,321	71,318
30,009	67,226	270,303	8,888
46,880	310,016	99,999	77,777
123,456	20,645	42,598	12,831
80,991	8,271	60,570	6,954
14,868	50,250	5,709	4,226
5,617	21,809	83,006	52,010
831	174	14,159	6,666

5.	6.	7.	8.
$1,234.69	$3,085.94	$2,345.00	$2,400.00
576.83	783.26	684.37	789.86
85.98	1,508.77	25.94	548.54
6.47	654.35	8.75	1,436.25
.23	88.99	18.46	894.98
.09	6.54	250.09	69.75
1.50	38.04	43.77	732.80
23.87	275.80	876.54	2,469.68
784.76	2,060.74	3,016.88	543.16

9. 183,756 + 98,765 + 8,438 + 789 + 2,468 + 1,892 + 860 + 3,456.

10. 95,438 + 264,838 + 124,606 + 88,776 + 9,543 + 32,685 + 18,943 + 250,608 + 27,655.

374. Find answers:

11.	12.	13.
$260,371	−$1,089.91	$468,800
−$40,252	$3,002.00	−$108,991

14.	15.	16.
−100,001	$610,030	− 75
514,868	−$448,315	174,004

17.	18.	19.
$3,141.59	− 804	$1,711.18
−$189.08	400,756	−$86.75

375. Multiply:

20. $10{,}345 \times 84$	**30.** $47{,}695 \times 19$	**40.** $12{,}847 \times 76$
21. $15{,}983 \times 56$	**31.** $34{,}588 \times 28$	**41.** $11{,}876 \times 78$
22. $19{,}876 \times 48$	**32.** $13{,}642 \times 65$	**42.** $10{,}635 \times 87$
23. $13{,}286 \times 75$	**33.** $18{,}395 \times 47$	**43.** $13{,}598 \times 63$
24. $24{,}680 \times 24$	**34.** $12{,}896 \times 73$	**44.** $9{,}876 \times 99$
25. $10{,}048 \times 86$	**35.** $24{,}966 \times 38$	**45.** $10{,}478 \times 92$
26. $33{,}465 \times 29$	**36.** $11{,}865 \times 82$	**46.** $16{,}428 \times 54$
27. $16{,}495 \times 57$	**37.** $11{,}898 \times 64$	**47.** $12{,}845 \times 49$
28. $27{,}654 \times 35$	**38.** $10{,}056 \times 95$	**48.** $13{,}295 \times 67$
29. $10{,}259 \times 93$	**39.** $10{,}209 \times 95$	**49.** $10{,}985 \times 85$

DIVISION.

376. Slate Exercises.

Divide:

50. $40{,}337 \div 19$	**67.** $286{,}638 \div 946$	**84.** $84{,}318 \div 38$
51. $33{,}684 \div 28$	**68.** $153{,}750 \div 1{,}025$	**85.** $100{,}295 \div 44$
52. $48{,}211 \div 37$	**69.** $828{,}402 \div 1{,}367$	**86.** $153{,}610 \div 49$
53. $55{,}338 \div 46$	**70.** $477{,}522 \div 2{,}151$	**87.** $172{,}819 \div 55$
54. $58{,}767 \div 57$	**71.** $774{,}038 \div 2{,}572$	**88.** $189{,}570 \div 63$
55. $156{,}130 \div 65$	**72.** $921{,}854 \div 3{,}006$	**89.** $200{,}300 \div 66$
56. $237{,}158 \div 79$	**73.** $876{,}438 \div 4{,}002$	**90.** $210{,}517 \div 69$
57. $251{,}490 \div 83$	**74.** $513{,}824 \div 5{,}041$	**91.** $230{,}329 \div 75$
58. $960{,}848 \div 92$	**75.** $934{,}829 \div 6{,}036$	**92.** $250{,}000 \div 124$
59. $112{,}360 \div 106$	**76.** $800{,}800 \div 7{,}102$	**93.** $316{,}051 \div 256$
60. $217{,}365 \div 215$	**77.** $909{,}090 \div 8{,}103$	**94.** $408{,}935 \div 361$
61. $327{,}888 \div 324$	**78.** $18{,}950 \div 22$	**95.** $573{,}217 \div 423$
62. $442{,}681 \div 437$	**79.** $20{,}000 \div 24$	**96.** $516{,}600 \div 1{,}025$
63. $574{,}248 \div 568$	**80.** $23{,}486 \div 26$	**97.** $616{,}284 \div 2{,}014$
64. $747{,}579 \div 679$	**81.** $27{,}509 \div 28$	**98.** $873{,}103 \div 4{,}301$
65. $841{,}928 \div 764$	**82.** $42{,}035 \div 32$	**99.** $630{,}525 \div 6{,}005$
66. $182{,}160 \div 828$	**83.** $76{,}892 \div 35$	**100.** $987{,}654 \div 9{,}023$

MORE THAN ONE OPERATION.

377. Slate Exercises.

101. $40\frac{1}{2} + 13\frac{1}{4} + 5\frac{1}{2}$

102. $23 + 5\frac{3}{4} - 9\frac{1}{4}$

103. $63 \times 45 \times 3\frac{2}{5}$

104. $(72 \times 8\frac{7}{8}) \times 19$

105. $(48 \times 24) \div 12$

106. $48 \times (24 \div 12)$

107. $100 - (63\frac{1}{2} + 24\frac{1}{4})$

108. $(100 - 63\frac{1}{2}) + 24\frac{1}{4}$

109. $100 + 24\frac{3}{4} - 63\frac{1}{2}$

110. $(\frac{4}{5}$ of $100) \times 3\frac{3}{4}$

111. $\frac{4}{5}$ of $(100 \times 3\frac{3}{4})$

112. $\dfrac{1944 \div 54}{18}$

113. $\dfrac{(43 \times 7) - (11 \times 7)}{28}$

114. $\dfrac{(6 \times 18) + (9 \times 14)}{3}$

115. $\dfrac{6 \times 18}{3} + (9 \times 14)$

116. $(16 \times 15\frac{1}{4}) - 13$

117. $16 \times (15\frac{1}{4} - 13)$

118. $1944 \div (54 \div 18)$

119. $3\frac{1}{2} + (5\frac{1}{8} \times 8)$

120. $(3\frac{1}{2} + 5\frac{1}{8}) \times 8$

121. $(284 \times 42) + (18 \times 11)$

122. $284 \times (42 + 18) \times 11$

123. $(4\frac{1}{4} + 12\frac{1}{2} + 3\frac{1}{4}) \times 3\frac{2}{5}$

124. $(14 + 18 - 19) \times 75$

125. $(64 + \frac{92}{4}) - (37 + 16)$

126. $(33 \times 13) - (64 \times 4\frac{3}{4})$

127. $\dfrac{36 \times 25 \times 34}{17 \times 72 \times 5}$

128. $\dfrac{(36 \times 5) + (96 \times 24)}{18}$

129. $(6 \times 18) + \dfrac{9 \times 14}{3}$

130. $\dfrac{6 \times 18}{3} + \dfrac{9 \times 14}{3}$

378. Oral Problems.

1. A piece of ground is 100 feet long and 25 feet wide. How many feet of fence will be needed to enclose it?

2. A spool of thread contains 200 yards. How many inches does it contain?

3. If three quarts of molasses cost 18 cents, how much must be paid for a gallon?

4. A customer pays 18 cents for three-fourths of a gallon of molasses. What is the price of a gallon?

5. A boy hires a sail-boat at 60 cents an hour and uses it from half-past 8 o'clock until 10. How much has he to pay?

6. A woman divides a dollar and a half between two children. What part of a dollar does she give to each?

7. A farmer had 25 sheep. He bought 42 and sold 16. How many sheep had he then?

8. At 3 cents a mile, what would be the fare from New York to Philadelphia, 90 miles?

9. The distance between New York and Albany is 140 miles, and the fare is $2.80. What is the rate per mile?

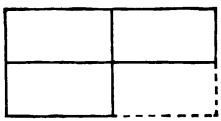
10. If there are 60 matches in a box, how many are there in 8 boxes?

379. Slate Problems.

1. A field, in the shape of a rectangle, is 275 yards long and 105 yards wide. How many yards of fence will it take to enclose it?

2. How many half-pints are there in a 15-gallon keg of cider?

3. If 3 yards of silk cost $1.80, what will be the cost of $5\frac{3}{4}$ yards?



4. A person pays $186 for three-quarters of a plot of ground. What would he have had to pay if he had bought the other quarter also? (Mark in each quarter its price.)

5. A man rents a house for $360 a year. How much rent does he pay from January 1 to August 1?

6. A grocer puts $9\frac{1}{2}$ pounds of coffee into two equal packages. How much is there in each package?

7. A gardener raised $98\frac{1}{2}$ bushels of potatoes. He ate $4\frac{1}{8}$ bushels and sold $53\frac{1}{4}$ bushels. How many bushels had he left?

8. At 2 cents per mile, what is the fare from Boston to New York, 249 miles?

9. If a train goes 40 miles an hour, how many minutes does it take to go one mile?

10. If there are 60 matches in a box, how many matches are there in two dozen boxes?

EASY FRACTIONS.

380. Oral Exercises.

How many inches in 1 foot? How many inches in $\frac{1}{2}$ foot? How many inches in $\frac{1}{3}$ foot? How many inches in $\frac{1}{6}$ foot?

How many inches in $\frac{1}{3}$ foot and $\frac{1}{6}$ foot? What part of a foot is $\frac{1}{3}$ foot + $\frac{1}{6}$ foot?

381. Divide a line into thirds. Place a line of the same length underneath, and divide it into sixths. Which is longer, $\frac{1}{3}$ or $\frac{1}{6}$? How many sixths are there in one-third? $\frac{1}{3}$ = how many sixths? $\frac{1}{2}$ = how many sixths? $\frac{1}{2}+\frac{1}{3}$ = how many sixths?

382. Slate Exercises.

1. $2\frac{1}{2}$	**2.** $5\frac{1}{3}$	**3.** $6\frac{1}{2}$	**4.** $9\frac{1}{3}$	**5.** $18\frac{1}{6}$	**6.** $24\frac{1}{6}$
$+3\frac{1}{3}$	$+7\frac{1}{6}$	$+9\frac{1}{6}$	$+10\frac{2}{3}$	$+9\frac{1}{3}$	$+18\frac{2}{3}$
7. $23\frac{1}{2}$	**8.** $47\frac{1}{2}$	**9.** $34\frac{1}{2}$	**10.** $50\frac{1}{2}$	**11.** $81\frac{2}{3}$	**12.** $33\frac{1}{3}$
$+14\frac{2}{3}$	$+8\frac{3}{4}$	$+99\frac{5}{6}$	$+84\frac{3}{3}$	$+6\frac{5}{6}$	$+16\frac{2}{3}$
13. 48	**14.** 54	**15.** 100	**16.** 29	**17.** 70	**18.** 213
$-3\frac{1}{2}$	$-27\frac{1}{3}$	$-63\frac{1}{4}$	$-19\frac{1}{3}$	$-23\frac{1}{3}$	$-65\frac{2}{3}$
19. 94	**20.** 83	**21.** $34\frac{1}{2}$	**22.** $62\frac{1}{2}$	**23.** $120\frac{1}{2}$	**24.** $57\frac{1}{2}$
$-56\frac{3}{4}$	$-9\frac{5}{6}$	$-27\frac{1}{4}$	$-58\frac{1}{4}$	$-34\frac{1}{3}$	$-28\frac{3}{3}$
25. $62\frac{3}{4}$	**26.** $73\frac{1}{2}$	**27.** $81\frac{1}{2}$	**28.** $45\frac{1}{2}$	**29.** $33\frac{1}{2}$	**30.** 24
$-28\frac{5}{8}$	$-14\frac{3}{8}$	$-20\frac{1}{3}$	-26	$-16\frac{1}{6}$	$-16\frac{5}{6}$
31. $24\frac{1}{3}$	**32.** 48	**33.** $57\frac{2}{3}$	**34.** $64\frac{2}{3}$	**35.** 90	**36.** $89\frac{7}{8}$
$-16\frac{1}{6}$	$-29\frac{5}{6}$	$-8\frac{1}{6}$	$-39\frac{1}{6}$	$-15\frac{7}{8}$	$-66\frac{3}{8}$

MULTIPLICATION.

383. Slate Exercises.

Multiply:

1.	456×102	26.	$107 \times 4{,}060$
2.	712×203	27.	$456 \times 103\frac{1}{2}$
3.	835×304	28.	$456 \times 103\frac{2}{3}$
4.	327×405	29.	$456 \times 103\frac{1}{4}$
5.	605×506	30.	$456 \times 301\frac{3}{4}$
6.	584×607	31.	$456 \times 130\frac{5}{6}$
7.	123×708	32.	$456 \times 130\frac{1}{2}$
8.	246×809	33.	$456 \times 301\frac{3}{5}$
9.	$777 \times 1{,}010$	34.	$375 \times 208\frac{2}{5}$
10.	$924 \times 1{,}011$	35.	$1{,}024 \times 204\frac{3}{4}$
11.	$1{,}010 \times 777$	36.	$208 \times 4{,}060\frac{7}{8}$
12.	$1{,}011 \times 924$	37.	$9{,}236 \times 106$
13.	248×123	38.	$10{,}848 \times 92$
14.	234×234	39.	$634 \times 27\frac{1}{8}$
15.	108×345	40.	$576 \times 102\frac{1}{6}$
16.	304×456	41.	$1{,}876 \times 405\frac{1}{4}$
17.	909×678	42.	$123 \times 3{,}001$
18.	132×789	43.	$683 \times 25\frac{3}{7}$
19.	$206 \times 3{,}910$	44.	$375 \times 80\frac{2}{5}$
20.	344×273	45.	$279 \times 3{,}050$
21.	$1{,}234 \times 123$	46.	$842 \times 113\frac{2}{5}$
22.	$2{,}345 \times 234$	47.	$4{,}365 \times 215$
23.	$806 \times 1{,}050$	48.	$2{,}888 \times 324$
24.	$480 \times 2{,}020$	49.	$5{,}681 \times 137\frac{1}{2}$
25.	$203 \times 3{,}040$	50.	$604 \times 1{,}580$

SHORT METHODS.

384. Blackboard Exercises.

Write answers:

643
287
? Beginning at the bottom say 12, 15, and **5** (writing it in its place) are 20. 4, 12, 16, and **4** (writing it) are 20. 4, 10.
25 The missing number is 45.
1,000

1. 293	**2.** 870	**3.** 315	**4.** ?	**5.** 699
64	?	487	208	87
712	54	?	63	208
?	387	95	5	?
1,340	1,496	1,000	1,402	997

385. $\frac{134}{28} = 4\frac{?}{28}$. We see that the quotient figure is 4, which is written. Four 8's are 32, and **2** (writing it) are 34. Four 2's are 8, 3 (carried from 34) are 11, and **2** (writing it), are 13. *Ans.* $4\frac{13}{28}$.

6.	$32\overline{)146}$ $4\frac{?}{32}$	**12.**	$61\overline{)360}$ $5\frac{?}{61}$	**18.**	$19\overline{)180}$ $9\frac{?}{19}$
7.	$21\overline{)160}$	**13.**	$71\overline{)490}$	**19.**	$51\overline{)300}$
8.	$280 \div 41$	**14.**	$720 \div 81$	**20.**	$180 \div 41$
9.	$450 \div 51$	**15.**	$540 \div 91$	**21.**	$210 \div 31$
10.	$\frac{240}{31} = 7\frac{?}{31}$	**16.**	$\frac{210}{71} = 2\frac{?}{71}$	**22.**	$\frac{180}{21} = 8\frac{?}{21}$
11.	$\frac{270}{91} =$	**17.**	$\frac{560}{81}$	**23.**	$\frac{320}{41}$

386. Do not place multiplier under multiplicand.

24.	183×4	**29.**	512×8	**34.**	919×20
25.	246×7	**30.**	892×12	**35.**	459×50
26.	734×11	**31.**	376×40	**36.**	999×3
27.	284×30	**32.**	483×6	**37.**	888×2
28.	376×5	**33.**	609×9	**38.**	734×60

387. Write results:

39. $\frac{1}{2}$ of 289	**44.** $\frac{1}{7}$ of 574	**49.** $\frac{1}{20}$ of 5,678
40. $\frac{1}{8}$ of 429	**45.** $\frac{1}{8}$ of 796	**50.** $\frac{1}{30}$ of 7,890
41. $\frac{1}{4}$ of 678	**46.** $\frac{1}{9}$ of 983	**51.** $\frac{1}{40}$ of 2,345
42. $\frac{1}{5}$ of 888	**47.** $\frac{1}{11}$ of 1,234	**52.** $\frac{1}{50}$ of 4,567
43. $\frac{1}{6}$ of 357	**48.** $\frac{1}{12}$ of 3,456	**53.** $\frac{1}{60}$ of 6,789

388. Write the missing numbers directly in their places.

54. 1,346	**55.** ?	**56.** ?	**57.** 240
$-$?	$-$ 873	$\times$ 12	$\times$?
879	2,999	8,736	4,800

58. $\frac{?}{7} = 12\frac{3}{7}$ **59.** $\frac{?}{6} = 33\frac{1}{6}$ **60.** $\frac{96}{?} = 32$ **61.** $\frac{490}{?} = 7$

389. Oral Problems.

1. By selling a horse for $300, a man gained $40. What did he pay for the horse?

2. If a train goes 32 miles in an hour, how far will it go in 15 minutes?

3. What will be the cost of a quarter of a pound of nutmegs at 6 cents an ounce?

4. How many 2-ounce packages can be made from 3 pounds of pepper?

5. A man travels 24 miles in 6 hours. How far does he go in $4\frac{1}{2}$ hours?

6. Paid $32 for 16 yards of cloth. What did it cost per yard?

7. A man and his two sons earned $90. The father earned $40. What did each boy earn?

8. John reached school at 13 minutes past 8; James came 17 minutes later. What time was it when James arrived?

9. Corn sold last year for 57 cents per bushel. This year it is 18 cents higher. What is the present price?

10. What do I receive for an article that cost me 71 cents, and which I sell at a loss of 14 cents?

11. How many years old to-day is a boy that was born in 1884?

390. U. S. Civil Service. Printer's Assistant Examination.— Treasury Department.

1. Add the following, placing the total at the bottom:

742,155.74
429.39
6,873.68
397.49
1,956,374.20

2. Express in figures one thousand eight hundred eighty-eight.

3. From 332,721 take 143,832.

4. Write in words the following number: 501,045.

5. Multiply 371,645 by 34.

6. Divide 109,782 by 342.

7. If a printer's assistant earns $1.25 a day, how much will she earn in a year of 300 working days?

8. If a skilled helper earns $325 in a year, how much will he have left after paying his board at the rate of $16 a month?

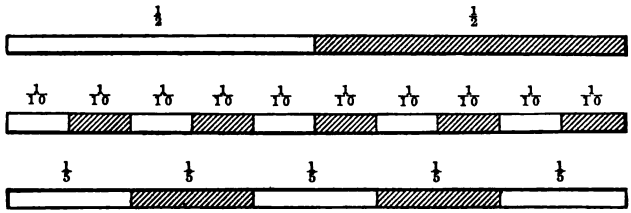
9. Add 125,324 and 3,507; from the sum subtract 342.

10. If a printer's assistant spends 10 cents a day for street-car fare, how much will she spend in two months of 30 days each?

HALVES AND FIFTHS.

391. Oral Exercises.

How many cents in one-fifth of a dime? How many cents in one-tenth of a dime? How many cents in one-half of a dime?



How many tenths in one-half? How many tenths in one-fifth? How many tenths in one-half plus one-fifth?

$\frac{1}{5} = \frac{?}{10}$ $\quad \frac{2}{5} = \frac{?}{10}$ $\quad \frac{3}{5} = \frac{?}{10}$ $\quad \frac{4}{5} = \frac{?}{10}$ $\quad \frac{1}{2} = \frac{?}{10}$

$\frac{2}{10} = ?$ $\quad \frac{4}{10} = ?$ $\quad \frac{5}{10} = ?$ $\quad \frac{6}{10} = ?$ $\quad \frac{8}{10} = ?$

392. Slate Exercises.

1. $19\frac{1}{2}$	2. $23\frac{1}{2}$	3. $35\frac{1}{2}$	4. $64\frac{1}{2}$	5. $47\frac{2}{5}$
$+1\frac{1}{5}$	$+2\frac{2}{5}$	$+3\frac{3}{5}$	$+5\frac{4}{5}$	$+33\frac{3}{5}$
6. $25\frac{1}{2}$	7. $50\frac{1}{2}$	8. $84\frac{3}{5}$	9. $92\frac{4}{5}$	10. 68
$-16\frac{1}{5}$	$-29\frac{2}{5}$	$-77\frac{1}{2}$	$-\frac{1}{2}$	$-10\frac{2}{5}$

FOURTHS AND FIFTHS.

393. Oral Exercises.

When we add *halves* and *fifths*, we change both to *tenths*. To what must we change *fourths* and *fifths* when we wish to add them? Why will it not do to use *tenths*?

394. Slate Exercises.

11. $\frac{1}{4}$	12. $2\frac{1}{4}$	13. $3\frac{1}{4}$	14. $3\frac{3}{4}$	15. $15\frac{3}{4}$
$+\frac{1}{5}$	$+\frac{1}{5}$	$+1\frac{1}{5}$	$+1\frac{1}{5}$	$+3\frac{1}{5}$
16. $26\frac{1}{4}$	17. $38\frac{1}{4}$	18. $49\frac{2}{5}$	19. $97\frac{1}{5}$	20. $18\frac{1}{4}$
$+7\frac{2}{5}$	$+15\frac{3}{5}$	$+26\frac{3}{5}$	$+7\frac{4}{5}$	$+29\frac{4}{5}$
21. $61\frac{1}{4}$	22. $70\frac{2}{5}$	23. $83\frac{3}{5}$	24. $55\frac{4}{5}$	25. $32\frac{4}{5}$
$-52\frac{1}{5}$	$-9\frac{1}{4}$	$-20\frac{1}{4}$	$-48\frac{1}{4}$	$-17\frac{3}{4}$

395. Add:

26. $15\frac{1}{4}$	27. $23\frac{1}{5}$	28. $17\frac{1}{2}$	29. $49\frac{1}{2}$	30. $52\frac{1}{2}$
$9\frac{1}{4}$	$6\frac{1}{4}$	$9\frac{1}{4}$	$29\frac{1}{8}$	$20\frac{1}{4}$
$8\frac{1}{5}$	$\frac{1}{5}$	$3\frac{1}{8}$	$3\frac{1}{8}$	$10\frac{1}{8}$

396. Subtract:

31. 25	32. 36	33. 47	34. 58	35. 69
$3\frac{1}{2}$	$4\frac{1}{8}$	$5\frac{1}{4}$	$6\frac{1}{5}$	$7\frac{1}{6}$
36. 70	37. 81	38. $92\frac{1}{2}$	39. $88\frac{1}{8}$	40. $75\frac{1}{4}$
$8\frac{1}{8}$	$9\frac{1}{8}$	$8\frac{1}{8}$	$9\frac{1}{4}$	$10\frac{1}{5}$
41. $64\frac{1}{2}$	42. $99\frac{1}{8}$	43. $87\frac{1}{2}$	44. $15\frac{1}{2}$	45. $20\frac{1}{2}$
$5\frac{1}{6}$	$29\frac{1}{6}$	$49\frac{1}{5}$	$8\frac{1}{4}$	$11\frac{1}{8}$
46. $13\frac{1}{8}$	47. $81\frac{1}{4}$	48. $93\frac{1}{4}$	49. $47\frac{2}{5}$	50. $86\frac{4}{5}$
$5\frac{1}{5}$	$3\frac{1}{8}$	$38\frac{1}{8}$	$\frac{1}{4}$	$47\frac{1}{2}$

LONG DIVISION DRILLS.

397. Give quotients at sight. Omit remainders when there are any.

840 ÷ 210	420 ÷ 210	960 ÷ 320	840 ÷ 420
860 ÷ 430	990 ÷ 330	440 ÷ 220	390 ÷ 130
930 ÷ 310	880 ÷ 440	630 ÷ 210	660 ÷ 330
260 ÷ 130	280 ÷ 140	680 ÷ 340	640 ÷ 320

398.

840 ÷ 211	420 ÷ 216	960 ÷ 327	840 ÷ 422
860 ÷ 432	990 ÷ 337	440 ÷ 226	390 ÷ 131
930 ÷ 313	880 ÷ 448	630 ÷ 215	661 ÷ 330
260 ÷ 134	280 ÷ 149	680 ÷ 344	641 ÷ 321

399.

840 ÷ 209	421 ÷ 203	960 ÷ 319	849 ÷ 420
860 ÷ 429	992 ÷ 327	440 ÷ 219	398 ÷ 129
930 ÷ 309	883 ÷ 436	630 ÷ 209	667 ÷ 328
260 ÷ 129	284 ÷ 135	680 ÷ 339	645 ÷ 317

400.

2,510 ÷ 499	2,420 ÷ 391	3,699 ÷ 411	1,610 ÷ 381
3,640 ÷ 510	1,743 ÷ 526	2,043 ÷ 482	3,682 ÷ 613
3,240 ÷ 620	4,821 ÷ 589	4,220 ÷ 693	5,834 ÷ 728
3,510 ÷ 679	2,033 ÷ 791	4,934 ÷ 816	7,215 ÷ 781

401.

750 ÷ 150	1,200 ÷ 150	910 ÷ 130	1,040 ÷ 130
1,260 ÷ 140	700 ÷ 140	980 ÷ 140	900 ÷ 150
780 ÷ 130	1,350 ÷ 150	1,170 ÷ 130	650 ÷ 130
1,120 ÷ 140	840 ÷ 140	350 ÷ 170	640 ÷ 160

DIVISION.

402. Slate Exercises.

Divide:

1. 452,610 ÷ 141
2. 656,792 ÷ 152
3. 101,745 ÷ 133
4. 531,304 ÷ 154
5. 837,465 ÷ 155
6. 612,820 ÷ 136
7. 891,261 ÷ 147
8. 966,828 ÷ 138
9. 894,447 ÷ 149
10. 948,790 ÷ 158
11. 959,137 ÷ 137
12. 759,638 ÷ 146
13. 906,585 ÷ 135
14. 820,944 ÷ 144
15. 156,152 ÷ 153
16. 309,168 ÷ 152
17. 521,640 ÷ 161
18. 688,516 ÷ 172
19. 922,504 ÷ 183
20. 926,208 ÷ 194
21. 384,638 ÷ 215
22. 354,645 ÷ 235
23. 295,817 ÷ 256
24. 728,954 ÷ 277
25. 687,836 ÷ 293
26. 948,172 ÷ 318
27. 497,961 ÷ 347
28. 187,365 ÷ 375
29. 612,172 ÷ 396
30. 305,340 ÷ 424
31. 956,903 ÷ 452
32. 824,827 ÷ 483
33. 853,568 ÷ 531
34. 907,830 ÷ 562
35. 708,000 ÷ 594
36. 678,579 ÷ 644
37. 694,734 ÷ 689
38. 636,902 ÷ 724
39. 839,243 ÷ 847
40. 588,640 ÷ 981
41. 627,652 ÷ 1,032
42. 998,171 ÷ 2,165
43. 999,477 ÷ 3,254
44. 800,034 ÷ 4,316
45. 832,336 ÷ 5,409
46. 165,273 ÷ 6,521
47. 535,068 ÷ 7,611
48. 268,395 ÷ 8,794
49. 317,324 ÷ 9,801
50. 412,644 ÷ 1,453
51. 470,493 ÷ 2,043
52. 777,349 ÷ 3,087

403. Oral Problems.

1. A farmer had 42 bags of rye, each containing 2 bushels. How much rye did he have after selling 50 bushels?

2. I buy $1\frac{3}{4}$ lb. of 40-cent tea and hand the grocer a dollar. How much change does he give me?

3. If a man receives \$120 for three cows, how many would he have to sell to receive \$200?

4. Find the cost of 5 dozen oranges at a cent and a half apiece.

5. A boy sold some newspapers for 75 cents, on which he gained 18 cents. What did he pay for the papers?

6. Three girls divide equally among them 84 hickory nuts. What is the share of each?

7. A barrel of sugar contains 300 pounds. What is it worth at 5 cents a pound?

8. A man had 40 pigs and sold three-quarters of them at 3 dollars each. How much money did he receive?

9. A girl multiplied a number by 7 and her answer was 98. What number did she multiply?

10. A farmer exchanged 7 sheep worth \$12 each for cows worth \$42 each. How many cows did he get?

11. If a man walks 4 miles an hour for 5 hours a day, how many days would he take to walk 100 miles?

12. A man buys 2 pieces of ribbon for 90 cents, paying 10 cents per yard. There are $4\frac{1}{4}$ yards in one piece. How many yards are there in the other?

13. If 4 baseballs cost a dollar, how many dollars will 84 baseballs cost?

14. How many freight cars will there be in 4 trains of 41 cars each?

404. Slate Problems.

1. A farmer had 800 bushels of wheat. How much had he after selling 8 loads of 70 bushels each?

2. I buy $1\frac{3}{4}$ lb. of beefsteak at 24 cents a pound, and give the butcher a dollar. How much change should I receive?

3. If a person receives $105 for 3 cows, how many cows would he have to sell to obtain $175?

4. Find the cost of 5 dozen oranges at the rate of 2 oranges for 3 cents.

5. By selling a house for $5,750, a man made a profit of $250. How much did he pay for the house?

6. Three brothers divide equally among them 679 acres of land. What is the share of each?

7. Five barrels of flour contain 980 pounds. What is the value of one barrel, when flour is worth 3 cents a pound?

8. A man sells $\frac{3}{4}$ of his pigs at $5 each. If he had 24 pigs at first, what did he receive for those he sold?

9. A girl multiplied a number by 7 and the answer was 2,814. What number did she multiply?

10. A farmer exchanges 12 sheep worth $15 each for cows worth $45 each. How many cows should he receive?

11. If a boy walks 2 miles an hour for 7 hours a day, how many days would he be in walking from Washington to New York, 224 miles?

12. A man buys 4 pieces of ribbon for 90 cents, paying 10 cents a yard. The first piece contains $1\frac{1}{2}$ yd., the second $2\frac{1}{2}$ yd., and the third $1\frac{5}{8}$ yd. How many yards are there in the fourth piece?

13. How many quarts are there in a barrel that contains $2\frac{1}{2}$ bushels?

MULTIPLICATION.

405. Blackboard Exercises.

The pupils should write answers at sight to the following questions placed on the blackboard.

Find the cost of:

1. 21 lb. of raisins, at 13¢ per lb.
2. 22 hats, at $1.30 each.
3. 14 sofas, at $21 each.
4. 31 yards of ribbon, at 15¢ per yd.
5. 42 overcoats, at $21 each.
6. 13 lb. of butter, at 32¢ per lb.
7. 31 yards of silk, at $2.20 per yd.
8. 24 bu. of wheat, at $1.02 per bu.
9. 32 horses, at $203 each.
10. 15 cows, at $42 each.
11. 120 bbl. of flour, at $5.25 per bbl.
12. 41 pigs, at $13 each.
13. 4½ tons of hay, at $14 per ton.
14. 33,000 stamped envelopes, at $21 per thousand.
15. 400 lb. of sugar, at 5½¢ per lb.
16. 12 hats, at $2.25 each.
17. 16 hats, at $2¼ each.
18. 12⅜ yd. of silk, at $3 per yd.
19. 21 sheep, at $14 each.
20. 104⅞ yd. of muslin, at 8¢ per yd.

DIVISION.

406. Blackboard Exercises.

Find cost of 1 pound, 1 gallon, etc. Write answers at sight:

21. $2.94 for 14 lb. of coffee.

22. $33 for 15 hats.

23. $325 for 13 sofas.

24. $882 for 42 overcoats.

25. $5.25 for 105 bottles of ink.

26. $37.20 for 31 yards of cloth.

27. $9.92 for 32 lb. of butter.

28. $25.50 for 25 bu. of wheat.

29. $4,284 for 21 horses.

30. $615 for 15 cows.

31. $480 for 96 bbl. of flour.

32. $574 for 41 pigs.

33. $286 for 22 tons of hay.

34. $93.20 for 4 thousand envelopes.

35. $35 for 700 lb. of sugar.

36. $33 for 12 hats.

37. $35.20 for 16 hats.

38. $144 for 48 yd. of silk.

39. $225 for 15 sheep.

40. $16.96 for 212 yd. of muslin.

41. $18.00 for 15 dolls.

42. $600 for 4 wagons.

43. $33.60 for 30 yd. of carpet.

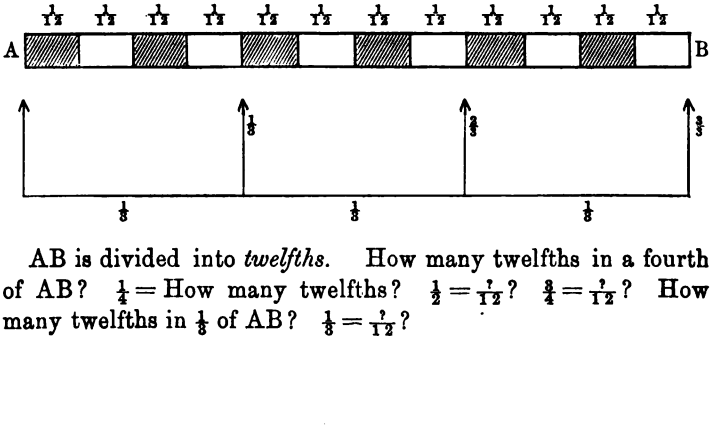
TABLE.

407. Find the total attendance of each day, the aggregate weekly attendance of each class, and the grand total.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Total.
1st class . . .	36	37	35	31	33	172
2d " . . .	38	40	36	32	37	
3d " . . .	40	41	40	37	39	
4th " . . .	42	42	43	41	42	
5th " . . .	44	41	45	43	44	
6th " . . .	46	45	45	44	42	
7th " . . .	48	45	43	47	46	
8th " . . .	50	49	49	49	48	
9th " . . .	52	53	50	49	50	
10th " . . .	54	55	56	55	54	
Totals.						

THIRDS AND FOURTHS.

408. Oral Exercises.



AB is divided into *twelfths*. How many twelfths in a fourth of AB? $\frac{1}{4}$ = How many twelfths? $\frac{1}{2} = \frac{?}{12}$? $\frac{3}{4} = \frac{?}{12}$? How many twelfths in $\frac{1}{3}$ of AB? $\frac{1}{3} = \frac{?}{12}$?

How many inches in $\frac{1}{4}$ foot? In $\frac{1}{2}$ foot? In $\frac{3}{4}$ foot? In $\frac{1}{8}$ foot? In $\frac{3}{8}$ foot?

How many inches in $\frac{1}{8}$ foot $+ \frac{1}{4}$ foot? How many twelfths in one-fourth and one-third?

409. Slate Exercises.

1. $12\frac{1}{3}$ $+ 6\frac{1}{4}$	2. $15\frac{1}{4}$ $+ 9\frac{1}{3}$	3. $18\frac{1}{4}$ $+ 27\frac{2}{3}$	4. $25\frac{3}{4}$ $+ 40\frac{1}{3}$	5. $63\frac{2}{3}$ $+ 15\frac{3}{4}$
6. $80\frac{1}{3}$ $- 5\frac{1}{4}$	7. $37\frac{2}{3}$ $- 20\frac{1}{4}$	8. $16\frac{3}{4}$ $- \frac{1}{3}$	9. $75\frac{2}{3}$ $- 26\frac{1}{4}$	10. $56\frac{3}{4}$ $- 18\frac{2}{3}$

410. Add:

11. $14\frac{1}{2}$ $3\frac{1}{3}$ $\frac{1}{4}$	12. $20\frac{1}{2}$ $15\frac{2}{3}$ $6\frac{1}{4}$	13. $33\frac{1}{2}$ $20\frac{1}{3}$ $11\frac{3}{4}$	14. $5\frac{1}{2}$ $9\frac{2}{3}$ $14\frac{3}{4}$	15. $25\frac{1}{3}$ $25\frac{1}{3}$ $25\frac{1}{4}$
16. $81\frac{1}{4}$ $30\frac{1}{4}$ $5\frac{1}{3}$	17. $27\frac{2}{3}$ $19\frac{1}{4}$ $3\frac{2}{3}$	18. $56\frac{1}{4}$ $8\frac{1}{3}$ $\frac{3}{4}$	19. $65\frac{2}{3}$ $19\frac{3}{4}$ $7\frac{1}{3}$	20. $80\frac{2}{3}$ $5\frac{3}{4}$ $10\frac{2}{3}$
21. $22\frac{1}{2}$ $5\frac{1}{4}$ $1\frac{1}{3}$	22. $37\frac{1}{2}$ $16\frac{1}{3}$ $5\frac{1}{6}$	23. $9\frac{1}{3}$ $3\frac{1}{3}$ $\frac{1}{6}$	24. $75\frac{1}{3}$ $20\frac{1}{4}$ $3\frac{1}{2}$	25. $84\frac{1}{3}$ $10\frac{1}{4}$ $2\frac{1}{6}$

411. Subtract:

26. $95\frac{1}{2}$ $70\frac{1}{6}$	27. $87\frac{3}{8}$ $16\frac{1}{4}$	28. $70\frac{1}{3}$ $24\frac{1}{6}$	29. $62\frac{1}{3}$ $37\frac{1}{4}$	30. $51\frac{2}{3}$ $48\frac{1}{4}$
31. $75\frac{1}{2}$ $61\frac{1}{3}$	32. $87\frac{2}{3}$ $28\frac{1}{2}$	33. $52\frac{7}{8}$ $14\frac{1}{6}$	34. $40\frac{5}{8}$ $9\frac{1}{4}$	35. $31\frac{5}{6}$ $13\frac{1}{3}$
36. 87 $55\frac{1}{2}$	37. 62 $31\frac{1}{3}$	38. 77 $54\frac{1}{4}$	39. 56 $14\frac{1}{6}$	40. 59 $21\frac{1}{8}$
41. 75 $61\frac{1}{9}$	42. 16 $12\frac{2}{3}$	43. 71 $43\frac{3}{4}$	44. 93 $61\frac{7}{8}$	45. 40 $26\frac{5}{6}$
46. $84\frac{1}{8}$ $52\frac{1}{9}$	47. $22\frac{4}{9}$ $9\frac{1}{3}$	48. $38\frac{5}{6}$ $24\frac{1}{2}$	49. $46\frac{7}{8}$ $5\frac{3}{4}$	50. $40\frac{3}{4}$ $20\frac{2}{3}$

DENOMINATE NUMBERS.

412. Slate Exercises.

1. Change 7 lb. 5 oz. to ounces.
2. Change 69 oz. to pounds and ounces.
3. 82 qt. to gallons and quarts.
4. 14 gal. 3 qt. to quarts.
5. 47 pt. to quarts and pints.
6. 28 qt. 1 pt. to pints.
7. 18 bu. 3 pk. to pecks.
8. 17 pk. 7 qt. to quarts.
9. 97 qt. to pecks and quarts.
10. 87 pk. to bushels and pecks.
11. 49 bu. to quarts.
12. 5 yards to inches.
13. 14 yd. 2 ft. to feet.
14. 13 ft. 3 in. to inches.
15. 119 in. to feet and inches.
16. 70 ft. to yards and feet.
17. Add 24 lb. 12 oz. and 19 lb. 4 oz.
18. 63 gal. 3 qt. + 24 gal. 1 qt.
19. 27 qt. 1 pt. + 37 qt. 1 pt.
20. 83 bu. 2 pk. + 67 bu. 2 pk.
21. 13 pk. 5 qt. + 29 pk. 3 qt.
22. From 98 ft. take 12 ft. 9 in.
23. 75 bu. − 14 bu. 1 pk.
24. 33 ft. − 19 ft. 11 in.
25. 135 gal. − 67 gal. 2 qt.

413. Oral Problems.

1. A girl receives 70 in arithmetic and 90 in reading. What is her average in the two studies?

2. A man paid $30 each for two cows and $60 for a third. What was the average price of the three cows?

3. Bought 2 lb. 8 oz. of meat at 16 cents per lb., and 1 qt. 1 pt. of molasses at 10¢ per qt. What was the total cost?

4. What will a bushel of chestnuts cost at 10 cents per quart?

5. If 12 tons of coal cost $60, how many tons can be bought for $75?

6. How long will it take 1 man to do a piece of work, if 12 men can do it in 12 days?

7. Six dozen collars cost $6.60. What is the price of one dozen?

8. A farmer had eighty sheep. How many had he left after selling $\frac{5}{8}$ of them?

9. Sold 2 cows at $30 each and 3 at $40 each. How much was received for the five cows?

10. A grocer sold 25 lb. of tea on Monday, and 5 lb. more on Tuesday than on Monday. How much did he sell on both days?

11. 1,200 cabbage plants are to be placed in 4 rows. How many plants will there be in each row?

12. A train started with 100 passengers. If 65 got on and 40 got off, how many passengers would there be on the train?

13. A man sold a cow for $60. How much did he pay for the cow if he lost $20 on the sale?

14. Bought a cow for $48. How much would be gained by selling her for $60?

15. How old in 1891 was a boy that was born in 1880?

16. If a man saves $40 per month, in how many months will he save enough to buy a lot worth $480?

17. A man and his son receive $50 for 10 days' work. The father's wages are $3 per day. What wages does the son receive per day?

18. A dealer buys 15 pairs of shoes at $2 per pair. How much does he gain if he sells them for $3 per pair?

19. A farmer bought a cow for $60, a sheep for $\frac{1}{5}$ as much, and a calf for $\frac{1}{6}$ as much. What did he pay for the three?

20. There were 24 boys present in a certain class on Monday, 22 on Tuesday, 20 on Wednesday. What was the average number present each day?

21. A woman gives two $20 bills for two dresses. One costs $10, the other $10 more than the first. How much change does she receive?

22. What will be the cost of 4 loads of flour, 10 barrels to the load, at $5 per barrel?

23. Henry buys 4 base balls for $3. He gives $1.25 for one, 50 cents each for two. How much does he pay for the fourth?

24. A man buys a piano for $360. He pays $300 cash. How long will it take him to pay the balance at $12 per month?

25. A boy has $5\frac{1}{2}$ dozen eggs. How many will he have after selling 30 eggs?

414. Slate Problems.

1. A boy received 70 per cent in arithmetic, 80 in reading, 90 in spelling, 80 in penmanship. What is his average?

2. A man paid $300 each for two horses, and $200 each for three horses. How much did the five horses cost? What was the average price?

3. I bought 4 lb. 6 oz. meat at 16¢ per lb., 1 gal. 1 qt. molasses at 24¢ per gal. What was the total cost?

4. If chestnuts are sold at 5 ¢ per qt., how much will be received for $2\frac{1}{2}$ bushels?

5. If 23 tons of coal cost $115, how many tons can be bought for $145?

6. How long will it take 1 man to do a certain piece of work, if 26 men can do it in $7\frac{1}{2}$ days?

7. Six dozen collars cost $9.36. What is the price of one collar?

8. A merchant had 936 yards of muslin. After selling $\frac{5}{9}$ of it, how many yards were left?

9. A farmer sold 2 cows for $47 each, 3 for $36 each, and 7 for $29 each. How much did he receive for them all?

10. A grocer sold 86 pounds of sugar on Monday, 74 on Tuesday, 82 on Wednesday, 69 on Thursday, 58 on Friday, and as much on Saturday as on Monday and Wednesday together. How many pounds did he sell during the week?

11. 1,400 cabbage plants are to be planted in 40 rows. How many plants will there be in each row?

12. A train from New York to Philadelphia started with 265 passengers. 63 left the train at Newark, and 72 got on. 84 got on at New Brunswick, and 79 got off. 107 got on at Trenton, and 45 got off. How many were then on the train?

13. A man sold a house for $2,650. What did the house cost him if he lost $350 on the sale?

14. By selling a horse for $175, I lost $35. How much would I have gained or lost by selling the horse for $190?

15. George Washington was born in 1732 and died at the age of 67. In what year did he die?

16. If a man saves $25 per month, how many years will it take him to save enough to buy a lot for $600, and to build upon it a house costing $1,800?

17. A man and his son receive $108 for 24 days' work. If the son earns $1\frac{1}{2}$ per day, what does the father receive per day?

18. A shoedealer buys 20 dozen pairs of shoes at $1.75 per pair. What is the amount of his bill?

19. A farmer bought a horse for $150, a cow for $\frac{2}{5}$ as much, and a pig for $\frac{1}{10}$ as much. What did he pay for the three?

20. There were 48 boys present in a certain class on Monday, 52 on Tuesday, 45 on Wednesday, 47 on Thursday, 38 on Friday. What was the average number present each day?

21. A woman gives three $20 bills for two dresses, one costing $24, and the other $10 more. How much change does she receive?

22. What will be the cost of 4 loads of flour, 12 barrels to the load, at $4\frac{1}{2}$ per barrel?

23. Henry buys nine bats. He pays 25 cents for one, 15¢ each for two, and 5¢ each for three. If he pays a dollar for all, how much apiece does he pay for the others?

24. A man buys a piano for $750, paying $525 cash. How long will it take to pay the balance at $25 per month?

25. A grocer has a box of eggs containing 30 dozen. How many will he have after selling two dollars' worth, at 80 eggs for a dollar?

415. Slate Exercises.

Multiply:

1. $6,793 \times 123$	**7.** $1,375 \times 656$	**13.** $478 \times 2,064$
2. $5,627 \times 135$	**8.** $1,286 \times 749$	**14.** $384 \times 2,506$
3. $3,798 \times 234$	**9.** $1,058 \times 809$	**15.** $269 \times 3,506$
4. $2,409 \times 361$	**10.** $1,054 \times 908$	**16.** $275 \times 3,025$
5. $1,789 \times 450$	**11.** $687 \times 1,025$	**17.** $177 \times 4,708$
6. $1,364 \times 547$	**12.** $572 \times 1,037$	**18.** $126 \times 4,009$

19. $143 \times 1\frac{1}{3}$
20. $240 \times 2\frac{1}{12}$
21. $132 \times 3\frac{2}{11}$
22. $450 \times 4\frac{1}{10}$
23. $189 \times 5\frac{2}{9}$
24. $168 \times 6\frac{3}{8}$
25. $217 \times 7\frac{3}{7}$
26. $175 \times 9\frac{2}{5}$
27. $252 \times 10\frac{1}{4}$
28. $333 \times 11\frac{2}{3}$
29. $328 \times 12\frac{1}{2}$
30. $192 \times 4{,}063$
31. $198 \times 5{,}009$
32. $158 \times 5{,}970$
33. $164 \times 6{,}002$
34. $143 \times 6{,}240$
35. $136 \times 7{,}003$
36. $127 \times 7{,}350$
37. $109 \times 8{,}034$
38. $119 \times 8{,}006$
39. $107 \times 9{,}067$
40. $106 \times 9{,}005$
41. $136 \times 25\frac{7}{8}$
42. $192 \times 18\frac{5}{6}$
43. $140 \times 43\frac{4}{5}$
44. $124 \times 36\frac{3}{4}$
45. $156 \times 61\frac{1}{3}$
46. $198 \times 54\frac{1}{2}$
47. $161 \times 109\frac{1}{7}$
48. $189 \times 208\frac{1}{9}$
49. $250 \times 307\frac{1}{10}$
50. $240 \times 406\frac{1}{12}$
51. $330 \times 209\frac{1}{11}$

416. Divide:

52. 64,347 ÷ 29
53. 30,670 ÷ 39
54. 79,323 ÷ 49
55. 61,753 ÷ 59
56. 71,290 ÷ 69
57. 66,471 ÷ 79
58. 54,283 ÷ 89
59. 21,341 ÷ 99
60. 42,897 ÷ 192
61. 76,462 ÷ 293
62. 35,441 ÷ 394
63. 41,203 ÷ 495
64. 24,120 ÷ 596
65. 54,414 ÷ 697
66. 64,671 ÷ 798
67. 28,975 ÷ 891
68. 99,685 ÷ 999
69. 42,837 ÷ 987
70. 495,869 ÷ 1,907
71. 459,754 ÷ 1,971
72. 819,676 ÷ 2,908
73. 702,160 ÷ 3,907
74. 814,972 ÷ 4,906
75. 301,453 ÷ 5,905
76. 740,183 ÷ 6,904
77. 161,142 ÷ 7,903
78. 451,099 ÷ 8,902
79. 897,432 ÷ 9,901
80. 16,225 ÷ 28
81. 88,650 ÷ 38
82. 36,826 ÷ 48
83. 36,457 ÷ 58
84. 95,120 ÷ 68
85. 79,713 ÷ 78
86. 92,518 ÷ 88
87. 95,519 ÷ 98
88. 20,367 ÷ 187
89. 79,528 ÷ 286
90. 32,525 ÷ 386
91. 89,990 ÷ 489
92. 529,429 ÷ 585
93. 381,119 ÷ 687
94. 748,137 ÷ 786
95. 252,729 ÷ 885
96. 142,705 ÷ 988
97. 800,025 ÷ 974
98. 170,460 ÷ 1,863
99. 692,554 ÷ 2,864
100. 919,155 ÷ 3,869
101. 307,515 ÷ 4,867
102. 987,654 ÷ 5,432

417. Philadelphia Public Schools. — Oral Work.

1. $15 + 10 + 9 - 6 + 12 =$
2. $29 + 11 - 8 - 7 - 9 =$
3. $(\frac{3}{4}$ of $80) - 25 =$
4. $36 + 20 - 7 =$
5. 9 times $8 =$
6. 12 times $9 =$
7. 4 times $15 =$
8. $8 \times \ ? = 96$
9. How many 11's in 132?
10. In 98 are how many 12's?
11. How many 8's are in 79?
12. $(72 \div 12) \times 15 =$
13. $\frac{3}{4}$ of an hour = ? minutes?
14. 9 weeks = ? days?
15. 2 bushels and 1 peck = ? quarts?
16. 64 pints = ? gallons?
17. 60 inches = ? feet?
18. 48 ounces = ? pounds?
19. Show the pupils a box or a bucket and ask them to tell, approximately, how many half-pecks of sand it can hold.
20. At 3 cents each, how many eggs cost as much as 6 pounds of sugar at 8 cents a pound?

418. Written Work.

1. Write in figures: four thousand six, ten thousand twenty-five, six thousand forty, fifty thousand two hundred three.
2. Take \$10.25 from \$300.
3. Add 8,765; 708; 86; 76,458; 867; 56.
4. Multiply 867 by 97.
5. Divide 80,654 by 83.
6. A man earns five dollars a day, and he spends two dollars a day. How much will he save this year of 366 days, counting out 52 Sundays and 5 holidays?

7. If a vessel sails 8,125 miles in 65 days, in how many days would it sail 25,000 miles, the distance around the world?

8. How many feet of boards one foot wide are needed to make a gate 6 feet high and 4 feet wide? At 6 cents a foot, what would be the cost? Draw a diagram to explain your work.

THIRDS AND FIFTHS.

419. **Oral Exercises.**

When *halves* and *fifths* are to be added or subtracted, they must be changed to *tenths*. When we added or subtracted *fourths* and *fifths*, we changed both to *twentieths*. To what must we change *thirds* and *fifths* before we can find the sum of $\frac{1}{3}$ and $\frac{1}{5}$, or the difference between them?

420. **Sight Exercises.**

1. $\frac{1}{3}$ $+\frac{1}{5}$	2. $5\frac{1}{3}$ $+3\frac{1}{5}$	3. $5\frac{1}{3}$ $-\frac{1}{5}$	4. $5\frac{1}{3}$ $-3\frac{1}{5}$	5. $\frac{2}{3}$ $+\frac{1}{5}$
6. $2\frac{2}{3}$ $+1\frac{1}{5}$	7. $\frac{2}{3}$ $-\frac{1}{5}$	8. $2\frac{2}{3}$ $-1\frac{1}{5}$	9. $\frac{2}{3}$ $+\frac{2}{5}$	10. $6\frac{2}{3}$ $+\frac{2}{5}$
11. $\frac{2}{3}$ $-\frac{2}{5}$	12. $1\frac{2}{3}$ $-1\frac{2}{5}$	13. $\frac{2}{3}$ $+\frac{3}{5}$	14. $7\frac{2}{3}$ $+\frac{3}{5}$	15. $\frac{2}{3}$ $-\frac{3}{5}$
16. $9\frac{2}{3}$ $-8\frac{3}{5}$	17. $9\frac{1}{5}$ $-8\frac{2}{3}$	18. $1\frac{1}{5}$ $+\frac{2}{3}$	19. 20 $-10\frac{2}{3}$	20. 16 $-8\frac{1}{5}$
21. $7\frac{1}{2}$ $+9\frac{1}{2}$	22. $8\frac{1}{2}$ $-3\frac{1}{3}$	23. $6\frac{1}{4}$ $+3\frac{1}{3}$	24. $5\frac{1}{2}$ $-1\frac{3}{5}$	25. $6\frac{4}{5}$ $-1\frac{1}{2}$
26. $2\frac{1}{4}$ $-2\frac{1}{5}$	27. $3\frac{2}{5}$ $+3\frac{1}{4}$	28. $6\frac{1}{2}$ $+2\frac{2}{3}$	29. $5\frac{3}{4}$ $-3\frac{2}{3}$	30. 10 $-8\frac{1}{6}$

421. Slate Exercises.

1. $1\frac{1}{3}$	2. $3\frac{1}{3}$	3. $5\frac{1}{3}$	4. $10\frac{3}{5}$	5. $25\frac{3}{8}$
$+\frac{1}{5}$	$+1\frac{1}{5}$	$+2\frac{1}{8}$	$+6\frac{1}{8}$	$+12\frac{1}{5}$
6. $18\frac{1}{3}$	7. $29\frac{3}{8}$	8. $37\frac{3}{5}$	9. $64\frac{3}{8}$	10. $91\frac{4}{5}$
$-5\frac{1}{5}$	$-18\frac{1}{5}$	$-6\frac{2}{5}$	$-56\frac{3}{5}$	$-20\frac{2}{3}$

422. Add:

11. $8\frac{1}{5}$	12. $11\frac{1}{3}$	13. $24\frac{3}{8}$	14. $64\frac{1}{5}$	15. $30\frac{3}{5}$
$3\frac{1}{3}$	$9\frac{1}{5}$	$28\frac{1}{5}$	$20\frac{1}{3}$	$30\frac{1}{3}$
$7\frac{1}{5}$	$6\frac{1}{3}$	$\frac{1}{8}$	$14\frac{4}{5}$	$30\frac{3}{5}$
16. $6\frac{1}{2}$	17. $25\frac{1}{5}$	18. $47\frac{1}{2}$	19. $21\frac{3}{8}$	20. 32
$17\frac{3}{8}$	18	$23\frac{2}{5}$	$5\frac{1}{6}$	$9\frac{1}{2}$
20	$31\frac{2}{3}$	$6\frac{3}{4}$	8	$16\frac{3}{4}$
$3\frac{1}{4}$	$2\frac{1}{5}$	9	$16\frac{1}{2}$	$4\frac{7}{8}$
21. $16\frac{1}{3}$	22. 33	23. $60\frac{1}{3}$	24. $28\frac{5}{8}$	25. $25\frac{1}{2}$
$59\frac{4}{5}$	$47\frac{1}{2}$	$20\frac{1}{4}$	$27\frac{5}{6}$	35
$9\frac{1}{3}$	$12\frac{1}{4}$	10	$29\frac{5}{8}$	$15\frac{3}{4}$
3	$\frac{7}{8}$	$4\frac{1}{6}$	8	$5\frac{2}{3}$
26. $1\frac{3}{4}$	27. $14\frac{1}{2}$	28. $59\frac{1}{3}$	29. $87\frac{1}{2}$	30. $69\frac{1}{4}$
$2\frac{3}{4}$	$25\frac{2}{3}$	$23\frac{1}{9}$	$2\frac{3}{4}$	$15\frac{2}{3}$
$3\frac{3}{4}$	$36\frac{3}{4}$	$6\frac{1}{9}$	$5\frac{1}{6}$	$8\frac{1}{6}$

423. Subtract:

31. 90	32. 67	33. 84	34. 35	35. $48\frac{4}{5}$
$18\frac{4}{5}$	$63\frac{3}{5}$	$59\frac{2}{5}$	$16\frac{1}{5}$	27
36. $59\frac{1}{4}$	37. $72\frac{1}{3}$	38. $63\frac{2}{5}$	39. $22\frac{3}{4}$	40. $41\frac{5}{6}$
$16\frac{1}{6}$	$28\frac{1}{5}$	$44\frac{1}{6}$	$8\frac{1}{6}$	$6\frac{3}{4}$

SIGHT DRILLS.

424. Give sums:

130 + 80	360 + 200	131 + 62	3,000 + 6,000
20 + 290	200 + 790	245 + 30	5,000 + 4,000
380 + 70	150 + 600	372 + 23	2,000 + 7,000
50 + 490	400 + 540	411 + 84	4,000 + 3,000

425. Give differences:

210 − 130	1,500 − 600	193 − 62	9,000 − 6,000
320 − 90	1,100 − 700	193 − 131	8,000 − 3,000
450 − 380	1,400 − 800	275 − 245	7,000 − 5,000
540 − 60	1,700 − 900	275 − 30	6,000 − 2,000

426. Give products:

31×8	200×8	61×6	$84 \times \frac{3}{4}$	121×4
21×9	300×7	84×2	$39 \times \frac{2}{3}$	224×2
42×4	400×6	91×5	$96 \times \frac{1}{2}$	321×3
73×3	500×5	71×7	$78 \times \frac{1}{3}$	432×2

427. Give quotients:

$248 \div 8$	$248 \div 31$	$4{,}200 \div 700$	$4{,}200 \div 6$	$188 \div 2$
$189 \div 9$	$168 \div 21$	$4{,}800 \div 600$	$4{,}800 \div 8$	$279 \div 3$
$168 \div 4$	$126 \div 42$	$2{,}700 \div 300$	$2{,}700 \div 9$	$284 \div 4$
$219 \div 3$	$219 \div 73$	$3{,}600 \div 900$	$3{,}600 \div 4$	$155 \div 5$

428. Add:

$\frac{1}{2} + \frac{1}{2}$	$\frac{1}{4} + \frac{1}{5}$	$\frac{1}{2} + \frac{1}{6}$	$\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$	$\frac{1}{2} + \frac{3}{8}$
$\frac{1}{4} + \frac{1}{8}$	$\frac{1}{8} + \frac{1}{4}$	$\frac{1}{8} + \frac{1}{6}$	$\frac{1}{2} + \frac{1}{3} + \frac{1}{6}$	$\frac{1}{8} + \frac{2}{9}$
$\frac{1}{2} + \frac{1}{4}$	$\frac{1}{8} + \frac{1}{5}$	$\frac{1}{8} + \frac{1}{9}$	$\frac{1}{2} + \frac{1}{4} + \frac{1}{5}$	$\frac{1}{2} + \frac{2}{5}$
$\frac{1}{2} + \frac{1}{5}$	$\frac{1}{4} + \frac{1}{8}$	$\frac{1}{2} + \frac{1}{8}$	$\frac{1}{2} + \frac{1}{4} + \frac{1}{8}$	$\frac{1}{4} + \frac{3}{8}$

429. Oral Problems.

1. What two numbers are contained in 26 without a remainder?

A number that divides another exactly, is called a *factor* of it.

2. Find two factors of 34.

3. What part of an hour is 15 minutes?

4. When tea is 60 cents a pound, how much can be bought for 30 cents?

5. Find two factors of 39.

6. If dress goods are worth 20 cents a yard, what part of a yard can be bought for 15 cents?

7. 16 hours is what part of a day?

8. I have a gallon of milk. How many quarts and pints will I have after selling 2 quarts and 1 pint?

9. Find two factors of 93.

10. When cheese is 16 cents a pound, how many ounces can be bought for 10 cents?

11. There are 60 seconds in a minute. How many seconds in $\frac{2}{3}$ of a minute?

12. When ribbon is 60 cents a yard, what part of a yard can be bought for 40 cents?

13. A boy paid 15 cents for three-quarters of a pie. What was the price of a whole pie?

14. Find two factors of 62.

15. 7 is one factor of 91. What is the other factor?

16. Three pecks is what part of a bushel?

17. If I pay 9 cents for a pound and a half of sugar, what is the price of a pound?

18. Find two factors of 65.

19. When coffee is 30 cents a pound, how much can be bought for 75 cents?

20. A dozen bottles of ink are worth 60 cents. How many bottles can I buy for 45 cents?

21. A dealer bought 177 bushels of grain and sold 156 bushels. How many bushels had he left?

22. I paid $6.30 for silk and 62 cents for lining. What was the amount of my bill?

23. Find the cost of 7 pounds of cheese at 21 cents a pound.

24. A flour merchant paid $484 for 121 barrels of flour. What was the price of a barrel?

25. How much must I pay for $\frac{7}{8}$ of a yard of silk at $1.60 per yard?

26. Mr. Smith was 50 years old in 1893. In what year was he born?

430. Massachusetts Civil Service. Inspector: Water Department.

1. Write in figures the following number: One hundred eleven thousand three hundred six.

Write in words the number expressed by the following figures: 49,852.

2. Add the following column of figures:

27,896
35,427
12,397
75,556
29,872
12,387

3. An army of 10,000 men lost 4,809 men in battle; how many men were left?

4. How much will 72 barrels of flour weigh, if each barrel weighs 196 pounds?

5. How many horses worth $125 apiece must be given for a farm worth $11,000?

6. What will be the cost of 32 pounds of coffee, at $28\frac{3}{8}$ cents a pound?

431. Sub-Foreman of Laborers.

1. Write in figures the following number: One hundred sixty-three dollars and twelve cents.

2. If you receive 23 loads of gravel one day, 34 loads the next, and 17 loads the next, how many loads will you then have in all?

3. If you have $45 and pay out $27 for rent and other expenses, how much will you have left?

4. If a cubic yard of stone costs 88 cents, how many yards can be bought for $39.60?

5. What wages, at $1.75 per day, would be due a laborer that had worked an entire week of six days, except one half day?

432. Police Force of Boston.

1. Write in figures the following number: One hundred five thousand seven hundred three.

Write in words the number expressed by the following figures: 27,013.

2. Add the following column of figures:

24,387
19,986
12,241
72,978
23,300
19,781

3. An army of 14,225 men lost 1,987 men in battle; how many men were left?

4. How much will 87 barrels of sugar weigh, if each barrel weighs 235 pounds?

5. How many horses worth $185 apiece must be given for a farm worth $14,060?

6. What will be the cost of 80 pounds of coffee at 28¾ cents a pound?

433. Foreman of Laborers.

1. Write in figures the following number: One thousand five hundred sixty-three.

Write in words the number expressed by the following figures: 12,207.

2. Add the following column of figures:

1,743
876
1,427
3,764
998
2,507

3. Suppose you have under you 36 men at $1.75 per day; a rain-storm prevents them from working the last half day. What will be the amount of their pay for that day?

4. If you have a pile of 10,000 bricks, and take away 7,550 of them, how many will be left?

5. When stone is worth 88 cents a yard, how many yards can be bought for $37.84?

434. Fire Department of Boston.

1. Write in figures the following number: Fifteen thousand one hundred ten.

Write in words the number expressed by the following figures: 12,101.

2. Add the following column of figures:

18,465
32,101
25,976
14,385
25,989
17,877

3. If a man should buy a lot of land for $21,987, and sell it for $23,125, how much would he gain by the transaction?

4. If $4,130 be divided equally among 28 men, how much will each man receive?

5. How much will 43 horses cost, if the price of each horse is $175.50?

6. What will 28 pounds of beef cost, at 18¾ cents a pound?

435. Police of Cities other than Boston.

1. Write in figures the following number: Thirty thousand three hundred forty-six.

Write in words the number expressed by the following figures: 31,756.

2. Add the following column of figures:

14,328
3,709
14,257
18,601
2,782
11,907

3. If a railway train runs at the rate of 46 miles an hour, how far will it run in 27 hours?

4. If a man buys a piece of land for $17,810, and sells it for $16,987, how much does he lose by the transaction?

5. A man paid $4,025 for 23 horses; how many dollars did he pay for each horse?

6. How much will 18 pounds of beef cost, at 18½ cents a pound?

436. Detective Force of District Police.

1. Write in figures the following number: Fifteen thousand seven hundred one.

Write in words the number expressed by the following figures: 10,010.

2. Add the following column of figures:

26,954
17,683
10,857
18,642
25,395
32,693

3. If a man should buy a lot of land for $20,000 and sell it for $18,775, how much would he lose by the transaction?

4. If 35 hogs cost $394.45, what is the cost of each hog?

5. When eggs cost 35 cents a dozen, what is the cost of 648 eggs?

6. What will 45 pounds of sugar cost, at 8⅓ cents a pound?

437. Slate Exercises.

Multiply:

1. 9,304 × 28
2. 2,898 × 38
3. 8,063 × 48
4. 4,093 × 58
5. 7,435 × 68
6. 7,624 × 78
7. 6,042 × 88
8. 1,823 × 98
9. 7,204 × 27
10. 4,785 × 37
11. 7,003 × 47
12. 9,438 × 57

13. $7{,}508 \times 67$
14. $4{,}605 \times 77$
15. $4{,}001 \times 87$
16. $8{,}057 \times 97$
17. $8{,}924 \times 8\frac{1}{2}$
18. $7{,}634 \times 8\frac{1}{3}$
19. $7{,}837 \times 7\frac{1}{4}$
20. $8{,}766 \times 9\frac{1}{5}$
21. $4{,}259 \times 18\frac{1}{6}$
22. $5{,}987 \times 19\frac{1}{7}$
23. $7{,}698 \times 28\frac{2}{3}$
24. $7{,}899 \times 39\frac{3}{4}$
25. $8{,}907 \times 48\frac{4}{5}$
26. $7{,}482 \times 59\frac{5}{6}$
27. $7{,}098 \times 68\frac{6}{7}$
28. $6{,}905 \times 79\frac{7}{8}$
29. $5{,}407 \times 89\frac{8}{9}$
30. $8{,}908 \times 98\frac{9}{10}$
31. 792×128
32. 686×237
33. 417×348
34. 285×457
35. 149×568
36. 893×647
37. 247×786
38. 918×879
39. 865×965
40. 706×987
41. $749 \times 123\frac{1}{2}$
42. $879 \times 234\frac{1}{8}$
43. $872 \times 345\frac{1}{4}$
44. $643 \times 456\frac{1}{5}$
45. $654 \times 607\frac{1}{6}$
46. $797 \times 708\frac{1}{7}$
47. $468 \times 809\frac{1}{8}$
48. $543 \times 901\frac{1}{9}$
49. $809 \times 706\frac{2}{3}$
50. $698 \times 504\frac{3}{4}$

438. Divide:

51. $98{,}461 \div 27$
52. $87{,}925 \div 37$
53. $47{,}129 \div 47$
54. $89{,}990 \div 57$
55. $21{,}882 \div 67$
56. $54{,}754 \div 77$
57. $31{,}417 \div 87$
58. $42{,}784 \div 97$
59. $85{,}743 \div 26$
60. $35{,}186 \div 36$
61. $99{,}328 \div 46$
62. $17{,}441 \div 56$
63. $76{,}370 \div 66$
64. $81{,}552 \div 76$
65. $90{,}139 \div 86$
66. $30{,}190 \div 96$
67. $17{,}363 \div 273$
68. $64{,}071 \div 372$

69.	28,181 ÷ 475		**85.**	925,182 ÷ 4,756	
70.	10,469 ÷ 574		**86.**	669,100 ÷ 5,747	
71.	55,230 ÷ 677		**87.**	368,325 ÷ 6,774	
72.	96,117 ÷ 776		**88.**	529,492 ÷ 7,765	
73.	19,174 ÷ 879		**89.**	258,865 ÷ 8,792	
74.	32,430 ÷ 978		**90.**	748,137 ÷ 9,783	
75.	867,142 ÷ 269		**91.**	364,570 ÷ 2,692	
76.	136,204 ÷ 368		**92.**	840,910 ÷ 3,683	
77.	191,602 ÷ 467		**93.**	137,971 ÷ 4,674	
78.	514,270 ÷ 566		**94.**	678,457 ÷ 5,665	
79.	618,642 ÷ 665		**95.**	317,857 ÷ 6,656	
80.	352,170 ÷ 764		**96.**	745,000 ÷ 7,647	
81.	360,126 ÷ 863		**98.**	439,955 ÷ 8,638	
82.	253,415 ÷ 962		**98.**	607,050 ÷ 9,629	
83.	699,512 ÷ 2,738		**99.**	197,952 ÷ 27,387	
84.	736,012 ÷ 3,729		**100.**	200,000 ÷ 37,298	

439. *ROMAN NOTATION.*

1	I	10	X	100	C	1,000	M
2	II	20	XX	200	CC	2,000	MM
3	III	30	XXX	300	CCC	3,000	MMM
4	IV (5–1)	40	XL (50–10)	400	CD (500–100)	4,000	$\overline{\text{IV}}$
5	V	50	L	500	D	5,000	$\overline{\text{V}}$
6	VI	60	LX	600	DC	6,000	$\overline{\text{VI}}$
7	VII	70	LXX	700	DCC	7,000	$\overline{\text{VII}}$
8	VIII	80	LXXX	800	DCCC	8,000	$\overline{\text{VIII}}$
9	IX (10–1)	90	XC (100–10)	900	CM (1000–100)	9,000	$\overline{\text{IX}}$

440. Write in Roman numerals:

101	125	147	169	184	199	214	238
256	279	304	328	345	372	386	399

441. Read:

XCIX	CXXI	CCIV	CCXXIX
CCCIX	LXXVIII	CCCXLIX	LXXXIV
CCCXXIX	CCLXXII	CCCLXXXV	CCXCVIII

442. Write in Roman numerals:

459	563	674	708	891	999	1,001
1,123	1,234	1,345	1,567	1,609	1,745	1,893

443. Read:

CCLXXXIV	MDCCXXV	DCXLIII
MDCLXV	CCCLXXXV	DCCCXCVI
MDCCXLVIII	CDXCVI	MDCCCLXXXIX

444. A dash above a letter or combination of letters in Roman notation increases its value a thousand fold. $\overline{IV} = 4{,}000$, $\overline{X} = 10{,}000$.

445. NOTE. — Owing to its very limited application, time should not be spent unnecessarily on Roman notation.

446. Can you mention some uses? How is 4 expressed on the face of a clock? In which other way than the one given can 9 be written with Roman numerals? 40? 90? 400?

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